

JOHN PENINGTON & SON
Importers and Booksellers
127 S. 7th St
PHILADELPHIA
WILLIAM & MARY DARLINGTON
MEMORIAL LIBRARY

UNIVERSITY OF PITTSBURGH



Dar.
QL466
S274
v.3

Darlington Memorial Library

Isaac Smith
June 1864



Isaac Smith

**AMERICAN
ENTOMOLOGY,**

OR

Descriptions

OF THE

INSECTS OF NORTH AMERICA.

ILLUSTRATED BY

COLOURED FIGURES

FROM

ORIGINAL DRAWINGS EXECUTED FROM NATURE.

BY THOMAS SAY,

Curator of the American Philosophical Society, and of the Academy of Natural Sciences of Philadelphia; Correspondent of the Philomathique Society of Paris; and Professor of Natural History in the University of Pennsylvania, and of Zoology in the Philadelphia Museum.

“ Each moss,
Each shell, each crawling insect, holds a rank
Important in the plan of Him who fram'd
This scale of beings,”

STILLINGFLEET.

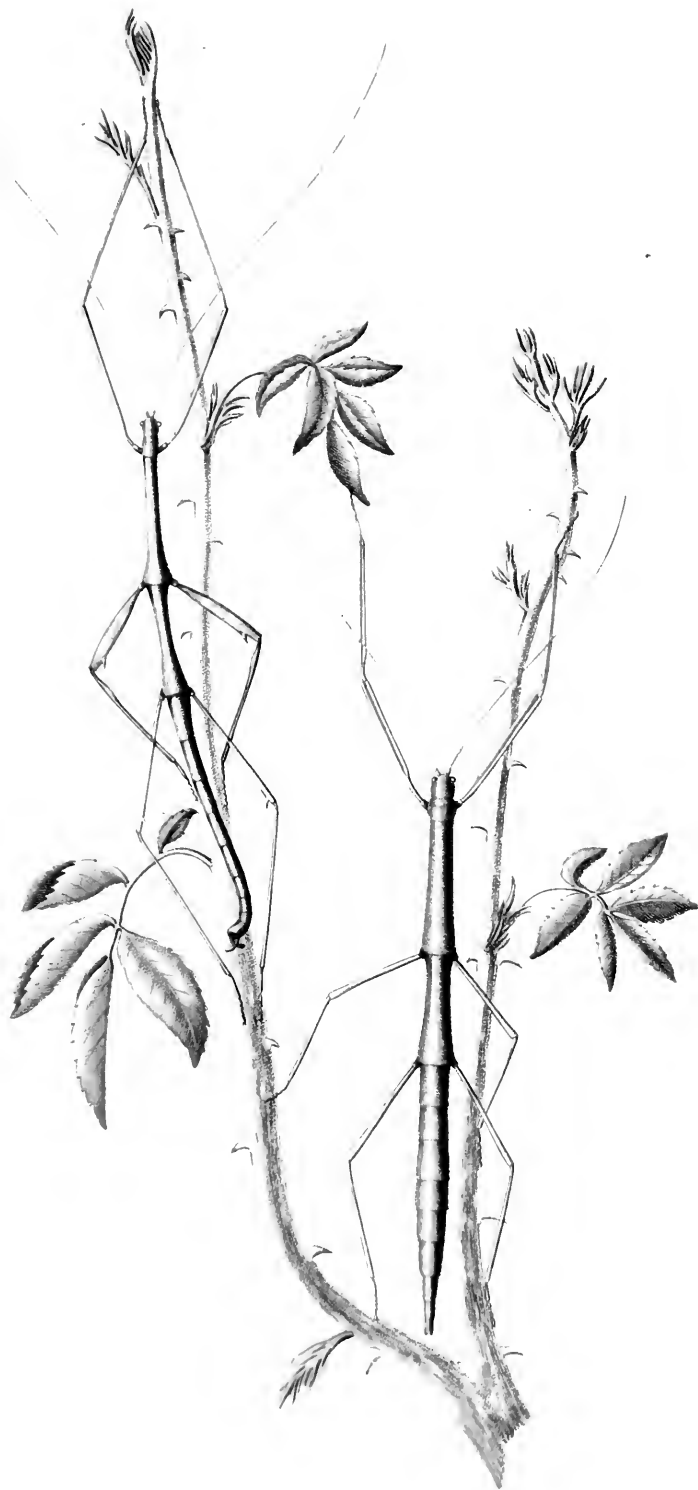
Philadelphia Museum:

PUBLISHED BY SAMUEL AUGUSTUS MITCHELL.

FOR SALE BY ANTHONY FINLEY, CORNER OF FOURTH AND CHESNUT ST.

William Brown, Printer.

1823.



SPECTRUM.

GENERIC CHARACTER.

Body elongated, slender, cylindrical; head slightly inclined, oval; antennæ long, slender, with numerous joints, inserted before the eyes; palpi cylindrical, short; labium quadrifid, the two inner divisions shortest; feet simple, the anterior pair being similar to the others; tarsi five-jointed; elytra very short or none.

OBSERVATIONS.

We are told that there was a time, when a piece of wood was transformed into a serpent, and even in the present age of knowledge, a hair fallen from the mane or tail of a horse into a stream of water, is believed by many to become animated into a distinct being; dead leaves shed by the parent tree are said to change gradually into animals of singular shape, and to have changed their place of abode under the eye of the historian who related the wonderful tale;

dead sticks also were said to sprout legs, to move from place to place, and perform all the functions of a living body. These, and a thousand other equally ridiculous tales, were at one period or another, more or less generally admitted as indisputable truths, and to contradict them would only be to expose oneself to the imputation of ignorance or criminal faithlessness. And although at present the possibility of making a living serpent out of wood, and the story of animated leaves and sticks would be despised as absurd, yet many are to be found, both in Europe and America, who firmly believe in the reanimation of a horsehair. But the most obvious errors have often a shadow of truth whereon to rest, or palliate, if not excuse them by the plea of ignorance or mistake. The historian of the walking leaf may have been deceived by the *MANTIS siccifolium* of Linné, the wings of which have some resemblance to a leaf. The *GORDIUS* resembles a horsehair, and no doubt gave rise to the story of the metamorphosis above mentioned, and the account of the walking sticks may have very honestly originated from the singular appearance and form of some insect of the present genus. These are long, slender and cylindrical; and on a first view it is not a little

PLATE 37 & 38.

difficult to reconcile their appearance to our preconceived ideas of the general insect form. They are nevertheless perfectly inoffensive, and feed altogether on vegetables. They are, probably, indebted for safety from the attacks of their enemies the birds, to their deceptive appearance, and by their general similarity in point of colour to the object on which they rest.

PLATE 37 & 38.

SPECTRUM FEMORATUM.

SPECIFIC CHARACTER.

Apterous; intermediate thighs dilated, angulated, and with the posterior thighs armed with a spine near the tip beneath.

DESCRIPTION.

MALE. *Body* greenish-brown, without any rudiment of hemelytra: *head* yellowish with three dilated fuscous vittæ; *antennæ* brown: *anterior thighs* unarmed, simple, bright green; tibia dull green, tip and tarsus testaceous; *intermediate thighs* dilated, angulated, pale ochreous, annulated with brown, the inferior angulated lines slightly serrated; a prominent, piceous, acute, robust spine beneath near the tip; tibiæ greenish, slightly serrated on the inner side; tarsus testaceous; *posterior thighs* brownish, ochreous, with a prominent, piceous, acute, robust spine near the tip beneath.

FEMALE. *Body* cinereous, more robust than that of the male; *thighs* nearly equal, inter-

mediate and posterior pairs with the subterminal spines very short.

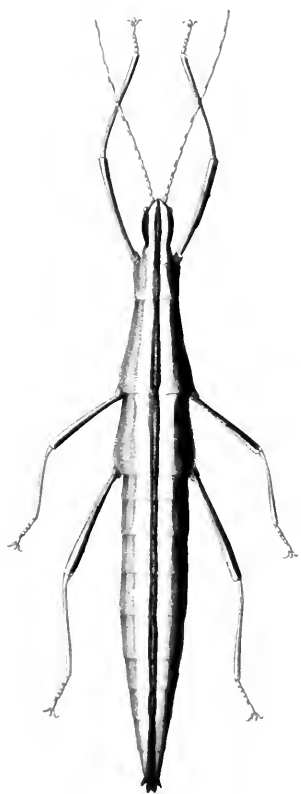
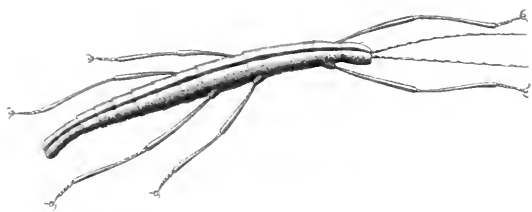
OBSERVATIONS.

I first published an account of this species in "Long's second Expedition," from a male specimen obtained near the Falls of Niagara on a Hickory tree. I had previously found an individual in Missouri, and recently on a journey with Mr. Maclure, I found several specimens on the sheltered face of a rock at Franklin, New Jersey; amongst these was the female which we now make known.

Since the above was written, Mr. Charles Pickering, of Salem, Massachusetts, has informed me that he obtained an individual near that city.

The left figure of the plate represents the male.

The right hand figure, the female.



SPECTRUM BIVITTATUM.

SPECIFIC CHARACTER.

Brown or blackish, with two yellow dorsal vittæ.

DESCRIPTION.

MALE. *Body* above black, with two broad yellow vittæ extending from the base of the antennæ to the posterior extremity of the body: *antennæ* dull reddish-brown, not much elongated: *beneath* dull yellowish clay colour: *feet* dusky, thighs unarmed, blackish towards the tip.

FEMALE, much larger than the male, the body brownish in those parts which on the male are black, with the exception of the vertebral line which is black; the yellow vittæ become sometimes obsolete towards the posterior part of the body: *thighs* unarmed.

OBSERVATIONS.

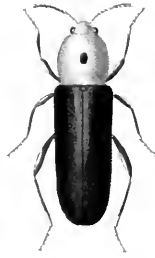
The disparity of size between the sexes of this species, would almost lead us to doubt their specific identity, or at least it would induce us to believe that the diminutive male is no other than the young of the female he accompanies as a mate.

On a journey to Florida with Mr. Maclure, I obtained a female which was crawling up the body of an Orange tree on Cumberland Island, Georgia. The male I had not seen until the recent return of Mr. T. Peale from that country, who brought many individuals of both sexes. He observed them in plenty in the southern part of that region. They were generally in pairs, on the Palmetto, lying close to the rib of the leaf. Mr. Peale remarked that when taken they discharged a milky fluid, from two pores of the thorax, diffusing a strong odour, in a great measure like that of the common GNAPHTHALIUM, or "Life everlasting;" and as this plant was growing near the place where they occurred, he supposed that it constituted at least part of their food. They vary much in colour, but it is believed that the two dorsal yellow stripes are never wanting.

The upper figure of the plate represents the male.

The lower figure, the female.

PLATE 38.



LANGURIA.

GENERIC CHARACTER.

Body rather slender, cylindrical; antennæ with a gradually formed club of five or six joints; palpi filiform, terminal joint of the labiales a little larger than the others; mandibles bifid at tip; maxillæ with horny teeth; tarsi with dense hairs beneath the three basal joints, the third bilobate.

OBSERVATIONS.

The manners and habits of these insects are but little known, and as the species are chiefly North American, it is with our entomologists, that the task of investigating them will rest. They have been said to frequent flowers, and I can corroborate the truth of the remark, by stating that I have frequently found them on flowers myself; but as Latreille observes, if they feed only on the contents of the nectary, to what use can the horny teeth be applied with which their jaws are furnished? This is a very

limited genus; Fabricius described three species in his last work on insects of this order, two from Sumatra under the names of *TROGOSITA elongata* and *filiformis*, and the other from North America, under that of *TROGOSITA bicolor*. He perceived that they did not altogether correspond with the other species of the group to which he referred them, for when describing the latter species, he expressly states, that in its elongated and cylindrical appearance it differed from *TENEBRIO*, and that it ought perhaps to form a distinct genus. Latreille finally established a genus under the name we have adopted, in his "Histoire Naturelle des Crustacés et Insectes," for the reception of the *bicolor*. In his "Genera Crustaceorum et Insectorum," he described another species under the name of *L. mozardi*; and in the pages of the "Journal of the Academy of Natural Sciences of Philadelphia," I increased the number to six, by the publication of two new species.

PLATE 39.

LANGURIA BICOLOR.

SPECIFIC CHARACTER.

Black, slender; thorax rufous, with a dilated black vitta.

SYNONYMS.

TROGOSITA BICOLOR. *Fabr. Syst. Eleut.* part 1, p. 152.

LANGURIA BICOLOR. *Latr. Hist. Nat. Crust. et Ins.* 12, p. 35. *Genera Crust. et Ins.* 3, p. 65. pl. 11, fig. 11. *Lam. An. sans Vert.* 4, p. 289.

DESCRIPTION.

Body piceous-black, slender: *head* dark piceous, with very obvious punctures: *thorax* pale yellowish-rufous, with obvious, rather distant punctures, and a dilated vitta of a dark piceous colour, occupying about one third of the surface: *elytra* black, with strongly impressed striæ of punctures: *pectus* pale yellowish rufous: *post-*

pectus black: *feet* blackish-piceous: *venter* piceous.

OBSERVATIONS.

It may be distinguished from the *puncticollis*, to which it is perhaps most closely allied, aside from its colours and more elongated form, by the obvious punctures of the head and thorax, as well as by the more deeply impressed punctures of the striæ and the approximation of the striæ to each other.

The lowest figure of the plate.

LANGURIA MOZARDI.

SPECIFIC CHARACTER.

Rufous; antennæ, elytra, and feet black.

SYNONYM.

LANGURIA MOZARDI. *Latr. Genera Crust. et Ins.* 3, p. 66. *Lamarck An. sans Vert.* 4, p. 290.
PLATE 39.

DESCRIPTION.

Body pale rufous, glabrous: *antennæ* dark piceous: *thorax* immaculate: *elytra* punctured; the punctures placed in regular series, deeply impressed, but without impressed striæ: *feet* black; *thighs* pale-rufous at base; *tibiæ* with a slight rufous tinge: *venter* with the three posterior segments black.

OBSERVATIONS.

This species was first described by Latreille in his elaborate and important work entitled "Genera crustaceorum et insectorum." The specific name is that of the donor. The *mozardi* has not been hitherto figured.

The left figure of the plate.

PLATE 39.

LANGURIA PUNCTICOLLIS.

SPECIFIC CHARACTER.

Rufous; antennæ, thoracic spot, elytra and feet black.

SYNONYM.

L. PUNCTICOLLIS. *Nob. Jour. Acad. Nat. Sc.*
3, p. 462.

DESCRIPTION.

Body rufous: *antennæ* and *palpi* black: *thorax* with a small, round, black spot on the middle, and an abbreviated, indented line upon the basil margin each side of the middle: *elytra* with rather slight striæ of impressed points, black, slightly tinged with blue: *feet* entirely black: *venter*, terminal segment, black.

PLATE 39.

OBSERVATION.

I obtained this species on the bank of the Mississippi river, above the confluence of the Ohio. It somewhat resembles the *L. bicolor*, Fabr., but is more robust.

The upper figure of the plate.

LANGURIA TRIFASCIATA.

SPECIFIC CHARACTER.

Rufous; head black; elytra bifasciate with violaceous.

SYNONYM.

L. 3.—FASCIATA, *Nob. Jour. Acad. Nat. Sc.* iii.
p. 462.

DESCRIPTION.

Body rufous, punctured: *head* black: *antennæ*, with the third, fourth, fifth, and sixth

PLATE 39.

D

joints, dull rufous: *thorax* immaculate: *elytra* with a violaceous base and tip; each band occupying about one-third of the entire length; with striæ of punctures: *feet* pale: *venter* at tip, and obsoletely at base, black.

OBSERVATIONS.

This species was also found on the bank of the Mississippi, above the entrance of the Ohio river. It is about equal in size to the *L. mozardi*, Latr.

The right figure of the plate.

PLATE 39.



PAPILIO.

For generic characters, see the article on
PAPILIO philenor.

OBSERVATIONS.

In pursuance of his attempt to unite natural and civil history, Linné divided his vast genus *PAPILIO* into several families, of which he named the first Equites or Knights. This family, containing some of the largest and most beautiful of the insect tribes, was subdivided into Trojans and Greeks. The former were distinguished by red spots on the breast.

The *P. philenor*, which we have already represented, belongs to the division of Trojans. But this arrangement has been abandoned by modern authors, who apply the name of *PAPILIO* only to the Linnæan *Equites*, subdividing the genus into those which have the inferior wings elongated behind in the form of a tail, and those which have them simply rounded in that part.

Much has been said and written relative to the acuteness of the sensation of pain in insects, and whatever may have a tendency to prevent acts of wanton barbarity ought certainly to be encouraged, as far as it is conformable to truth, but not further. The poet's assertion, that the worm, crushed beneath the foot of the passenger, "feels a pang as great as when a giant dies," cannot be substantiated, and proves nothing, therefore, but that the author declared positively what he merely believed or imagined to be true. My opinion, to the contrary of all this, is founded on such facts as the following. I caught an insect belonging to the present genus, and having impaled it, by passing a pin vertically through its body, it escaped from my hand. The pin being light, and no injurious pressure having been exerted on its body, the insect flew, apparently with its usual facility, to a flower, and unrolling its elongated proboscis, proceeded to extract the sweet fluid from the nectary, as if no mortal wound had been inflicted.

The plant represented in the plate, is the *Aquilegia canadensis*.

PLATE 40.

PAPILIO TURNUS.

SPECIFIC CHARACTER.

Wings tailed, yellow with a black margin and abbreviated bands; angle of the tail fulvous.

SYNONYMS.

PAPILIO TURNUS. *Linn. Fabr. Goeze Entom. Beytr.* iii. p. 71. *Herbst. Natursyst. Ins.* iii. p. 136, pl. 41, fig. 3, 4. *Hubner*, pl. fig. 1, 2. *Palis. de Beauv.* p. 119, pl. 2, b. fig. 1, 1. *Catesb. Carolina*, 2, pl. 83.

PAPILIO CAUDATUS MAXIMUS, Carolinianus, *Umbris strisusque nigris.*

PAPILIO ALCIDAMAS, *Cram.* i. p. 62, pl. 38, figs. A, B.—*Goeze Entom. Beytr.* iii. p. 77.

DER KAISERSCHMETTERLING. *Muller, Nat. Syst. Supp.* p. 284 and 496. (*Herbst.*)

PLATE 40.

DESCRIPTION.

Body above black, with a yellow line each side, passing over the origin of the wings, and over the head each side before the eyes: *superior wings* yellow, costal margin black with four black bands, of which the three exterior ones are abbreviated; exterior broad margin black with a series of small white spots and white crenulations on the edge; beneath, the colours are paler, and the dots of the exterior margin are much larger: *inferior wings* yellow; posterior portion black, with six lunules on the margin yellow, the first and last fulvous, the edge deeply crenated, the crenations white; anal angle fulvous edged with white, and with a bright green lunule above, and one or two green spots near it; disk, with an oblique black band, proceeding from the basal band of the superior wings, abbreviated near the black portion of the wing, and curving round and returning upward along the inner margin; *tail* moderate; beneath somewhat like the superior page, but the radiating lines proceeding from the discoidal cellule are black, the marginal lunules are much larger, and have a large fulvous spot in the middle of each, the black por-

tion is much tinged with green, and there are about four fulvous spots above it: *pectus* yellow, with two oblique lateral black lines.

OBSERVATIONS.

This beautiful, though very common insect, has already been noticed by many authors, who, for the most part, unite their testimony in favour of its similarity to the *P. machaon*, Fabr. of Europe. This correspondence is, however, only a general one, for on a particular comparison, a sufficient difference will be evident. It is found as far north as Maine, from whence I have received a specimen sent by Mr. E. Holmes, of Gardineer Lyceum.

The annexed plate represents this species in two positions.

PLATE 40.



ENOPLIUM.

GENERIC CHARACTER.

Three last joints of the antennæ dilated, forming a deeply serrated mass; the fourth, fifth, sixth, seventh, and eighth joints very small; palpi prominent, securiform; body cylindrical; tarsi with but four very obvious joints; penultimate joint bilobate.

OBSERVATIONS.

The species that compose this genus were separated by Latreille, from the genus *Tillus* of Olivier and Fabricius, from the circumstance that the ultimate joints of the antennæ, only, form a serrated mass, and that the tarsi have but four very obvious joints. Dejean mentions but two species as inhabitants of Europe; we have here given four species, but it would seem that the genus might be divided with advantage to the student, for whose convenience also it ought perhaps to be removed to the TETRAMERA, together with several kindred genera.

ENOPLIUM ONUSTUM.

SPECIFIC CHARACTER.

Black; thorax red, with two black lines; elytra margined with yellowish.

SYNONYM.

E. MARGINATUM. *Nobis. Journ. Acad. Nat. Sciences*, iii. p. 187.

DESCRIPTION.

Body black, hairy, punctured: *labrum* and basal joints of the *palpi*, pale: *thorax* red, with two dilated longitudinal black lines confluent behind: *elytra* with a yellowish margin, suture and base: *thighs* pale.

OBSERVATIONS.

This insect frequently occurs in Pennsylvania; I have also obtained it in the state of Ohio, and

Mr. John P. Brace, of Connecticut, presented me with an individual taken in that state. It resembles the *E. pilosum*, Forst. but is readily distinguished by the yellowish margin of the elytra.

I have been informed by Count Dejean, that the specific name *marginatum*, is preoccupied in this genus, I therefore substitute the present appellation.

The upper left figure of the plate.



ENOPLIUM PILOSUM.

SPECIFIC CHARACTER.

Black; thorax red, with two black lines.

SYNONYM.

LAMPYRIS PILOSA. *Forst. Nov. Ins.* p. 49.

PLATE 41.

DESCRIPTION.

Body shining black, covered with very short hairs, punctured: *labrum* dull testaceous: *thorax* bright sanguineous, with two broad longitudinal black vittæ approaching each other to the posterior margin, where they are confluent; anterior margin yellowish, interrupted by the black vittæ: *elytra* entirely black, opaque, immaculate: *wings* black.

OBSERVATIONS.

The very great similarity between the preceding and the present species, would almost persuade us that they are merely varieties of one species; nevertheless, as they seem to be constant in their respective characters, we consider them as distinct, though closely allied species.

The lower right figure of the plate.

PLATE 41.

ENOPLIUM DAMICORNE.

SPECIFIC CHARACTER.

Black; thorax rufous, slightly edged with black.

SYNONYM.

TILLUS DAMICORNIS. *Fabr. Syst. Eleut.* i. p. 282.

E. THORACICUM. *Nobis. Journ. Acad. Nat. Sciences.*

DESCRIPTION.

Body black, hairy, punctured, cylindrical: *antennæ* with the terminal joint narrowed near the tip on the inner side: *thorax* rufous, lateral and posterior edges black: *pectus* rufous: *elytra* black with a slight purplish tinge, immaculate; punctures large, profound, approximate, and behind the middle small, confluent.

PLATE 41.

OBSERVATIONS.

This insect is an inhabitant of the greater part of the Union. I have obtained specimens in Missouri. In my account of the species as above quoted, I made the following remark: "I should consider it the same as the *TILLUS damicornis* of Fabr. but that, in the description of that insect, the author mentions but two dilated joints of the antennæ, whereas in ours there are three dilated joints." Notwithstanding this remark, it agrees with it so well in other respects, that on further consideration, I think we may safely refer it to the *damicorne*, and admit that Fabricius was mistaken in the number of dilated joints. Latreille, in his *Histoire Naturelle*, &c. observes, that "Le tille damicorne de Fabricius diffère peu, or presque point de cette espèce, (*E. weberi*) a en juger par les phrases spécifiques."

The upper right figure of the plate.

PLATE 41.

ENOPLIUM QUADRIPUNCTATUM.

SPECIFIC CHARACTER.

Black; elytra sanguineous, with four black dots.

SYNONYM.

E. 4—PUNCTATUM. *Nobis. Journ. Acad. Nat. Sciences*, iii. p. 188.

DESCRIPTION.

Body black, somewhat hairy, punctured: *thorax* depressed, subquadrate, not contracted behind; angles rounded, punctures confluent each side: *scutel* black: *elytra* sanguineous, each with two black, orbicular, subequal dots, one before, and the other behind the middle.

OBSERVATIONS.

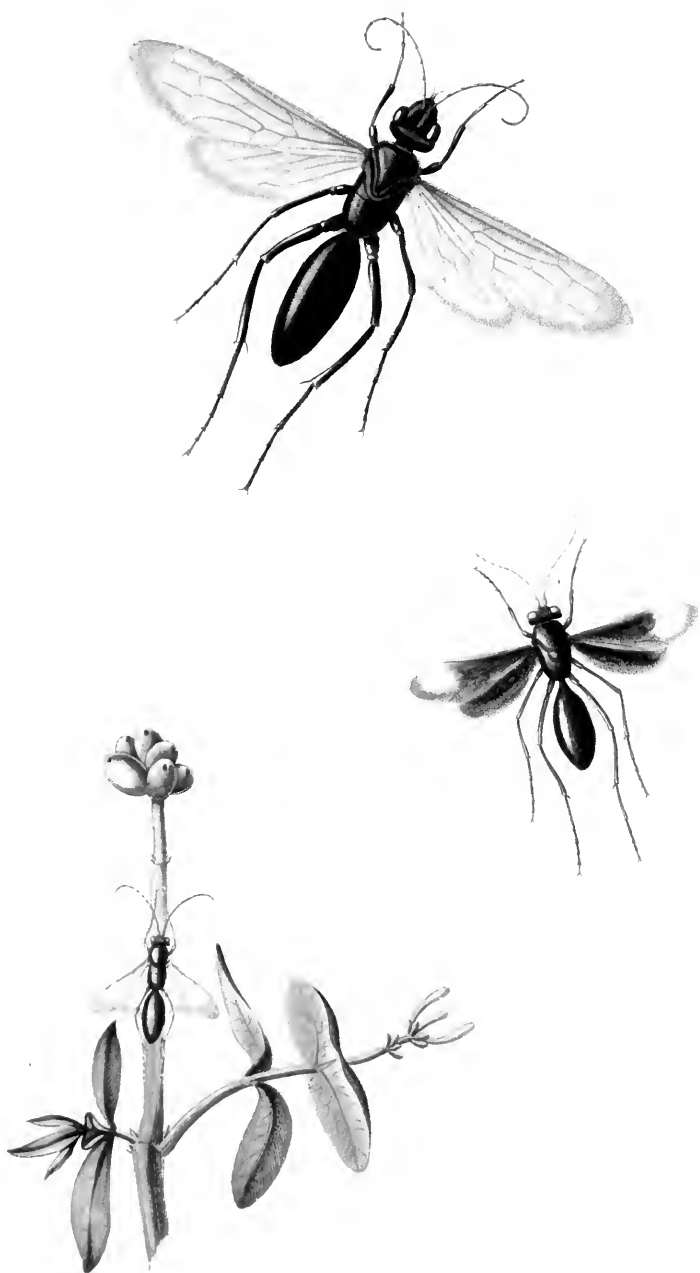
This species is subject to vary in the size of the spots on its elytra, those of some specimens

PLATE 41.

which I obtained in Arkansaw, being much larger than I have ever observed them on those of this state.

The middle figure of the plate, the lower left figure represents the variety.

PLATE 41.



POMPILUS.

GENERIC CHARACTER.

Labrum inserted under the nasus; eyes entire; stemmata three; antennæ as long as the head and trunk, in the female convoluted towards the tip; mandibles unarmed, or with one or two teeth; maxillary palpi longer than the labiales, three last joints nearly of equal length; superior wings not folded longitudinally; radial cellule of moderate size; cubital cellules three, the first elongated; second and third subequal, nearly square, receiving the two recurrent nervures; fourth cellule rudimental; feet elongated.

OBSERVATIONS.

These insects associate by pairs, and make their nest in the earth. The female digs a hole in a sunny bank or declivity; when this is accomplished, she goes in search of a spider or a caterpillar, which she punctures with her sting, and places at the bottom of her nest. Having deposited an egg, either in or upon the

prey, she closes the hole with earth, and abandons it. The young, hatched from the egg, has an abundant and convenient supply of food, in the body of the interred insect. Descending the Arkansaw river, with Major Long's party, I was one day surprised to see a species of this genus, dragging along the ground the body of the gigantic Bird-catching spider, the *MYGALE avicularia*, or a very closely allied species.

These insects are lively and active, flying rapidly from place to place for short distances, running briskly on the earth, vibrating their antennæ, and raising a little, and then depressing their wings, which are reclined upon the back.

The female is armed with a sting, and may be distinguished from the male by having twelve joints to the antennæ, whilst those of the male have thirteen joints.

Latreille was the first to separate this group from *SPIIEX*, under the name of *PSAMMOCHIARES*, but in his subsequent works, he adopted the more recent name of *POMPILUS*, given by Fabricius.

POMPILUS FORMOSUS.

SPECIFIC CHARACTER.

Polished bluish-green; wings rufous, with a dusky terminal submargin.

SYNONYM.

POMPILUS FORMOSUS. *Nobis. Western Quarterly Reporter*, ii. p. 76.

DESCRIPTION.

Body bright greenish, a little tinged with bluish, and in some lights changing to dull purplish, sericeous: *antennæ* black: *feet* black with a green reflection: *wings* bright golden rufous; at the extreme base, black; terminal submargin of the superiores, and terminal and inner submargins of the inferiores, dusky; the corresponding margins pale.

PLATE 42.

OBSERVATIONS.

This large and splendid species occurred within a hundred miles of the Rocky Mountains, on the banks of the Arkansaw river. It was not uncommon, and in consequence of the striking colour of the wings, as well as of its slow and steady flight, it was readily observed and taken. It was occasionally found perched on flowers, in company with *STIZUS grandis*, *Nobis*, and other Hymenopterus insects. The strongest similarity certainly exists between the *P. formosus* here represented, and the *PEPSIS marginata*, Beauv., but that species is so much larger, that we cannot believe it to be the same.

The upper figure of the plate.

PLATE 42.

POMPILUS UNIFASCIATUS.

SPECIFIC CHARACTER.

Black; antennæ and large wing spot, yellow.

DESCRIPTION.

Body black, tinged with purplish: *antennæ*, excepting the first and second joints, bright yellow: *wings* violaceous-black; superior pair with a broad yellowish band or spot near the tip of each, abbreviated before the inner margin, and of a subquadrate or nearly orbicular form.

OBSERVATIONS.

On a recent journey, in company with Mr. Maclure, I had the gratification to find this handsome species in the vicinity of Easton, Pennsylvania. I have not seen it elsewhere. Only a single specimen occurred, which is a female.

The middle figure of the plate.

PLATE 42.

POMPILUS TERMINATUS.

SPECIFIC CHARACTER.

Black; wings pale fulvous, with a dusky tip.

DESCRIPTION.

Body black, with a slight purplish tinge: *antennæ* black: *superior wings* pale fulvous, with a broad dusky tip: *inferior wings* paler.

OBSERVATIONS.

This species was brought by Major Long's party. I caught it near the Arkansaw river, about two hundred miles from the Rocky Mountains. But one specimen occurred, which is a female. In the proportion and distribution of the colours of the wings, it resembles *P. discolor* and *annulatus*, Fabr., but in magnitude and colour of the body it is very distinct.

The lower figure of the plate.

PLATE 42.



TETYRA.

GENERIC CHARACTER.

Thorax very narrow before; scutel elongated, longer than broad, not covering the sides of the tergum; head immersed to the eyes in the thorax; antennæ five-jointed, second joint longer than the third; labrum very long, striated; rostrum four-jointed, the three first joints subequal; tarsi three-jointed, the first joint longer than the second.

OBSERVATIONS.

The genus TETYRA was separated from CIMEX of Linné, by Fabricius, to include those species of which the scutel is very much dilated and elongated, and the antennæ five-jointed. As instituted by that author, it is perfectly synonymous with SCUTELLERA of Lamarck and Latreille. Leach made a different disposition of these genera. He restricted the genus SCUTELLERA to those species that have the abdomen entirely covered by the scutel,

and the second joint of the antennæ shorter than the third; the genus *TETYRA* he limited so as to include only those of which the scutel, though still dilated and elongated, does not entirely conceal the sides of the abdomen, and the second joint of the antennæ is longer than the third. A third closely allied genus was distinguished by Schrank, under the name of *THYREOCORIS*, and adopted by Leach. Its scutel is broader than long, the second joint of the antennæ is very short, and the anterior margin of the thorax is but little narrowed.

Of all these genera, we shall be able to give examples in the course of the present work.

TETYRA FIMBRIATA.

SPECIFIC CHARACTER.

Dark green; thorax with a yellow spotted patch, each side behind; scutel margined with yellow.

PLATE 43.

DESCRIPTION.

Body dark-green, with large punctures: *clypeus* with the lateral edges parallel: anterior edge rufous, indented in the middle: *antennæ* and middle of the *rostrum* rufous: *thorax* with a large yellow spot each side behind, including about two dark-green spots, and a brown one; posterior angles a little prominent, obtuse: *scutel*, excepting at base, with a three-toothed margin: *hemelytra* dark-green, with a yellow lateral and posterior margin, the membranous portion dark-violaceous: *feet* rufous; *thighs* with three narrow, yellow bands, the anterior pair one-spined beneath; *tibia* with one yellow band, the anterior pair dilated towards the tip: *venter* with a transverse thick line in the middle, and an anterior longitudinal one; lateral and posterior margins yellow, the former four-dotted each side; beyond the middle, are two large, slightly indented, sericeous spots.

PLATE 43.

OBSERVATIONS.

This singularly marked species, is rare in Pennsylvania.

The upper left figure of the plate.

TETYRA CINCTIPES.

SPECIFIC CHARACTER.

Dull, testaceous; feet pale, with fuscous spots.

DESCRIPTION.

Body above, dull, testaceous, or brownish, with close set, rather large, profound punctures: *head* black, acutely carinated, and with a very obvious tubercle each side, near the base; tip emarginated: *antennæ* picceous; terminal joint somewhat dilated: *thorax* with an obsolete glabrous line near the middle, and three tubercles on the anterior submargin, the intermediate one very obtuse, and sometimes obsolete; anterior

angles with a tubercle, and another on the lateral edge behind the middle: *anterior thighs*, and all the *tibiæ* blackish, with one or two pale bands: *intermediate* and *posterior thighs* pale, with two bands, and base blackish.

OBSERVATIONS.

Inhabits the middle states. It is one-quarter of an inch in length.

The lower right figure of the plate.

TETYRA VIOLACEA.

SPECIFIC CHARACTER.

Dark bluish-violaceous; venter with a fulvous line before the middle, and a spot at tip.

DESCRIPTION.

Body dark bluish-violaceous, with large punctures: *clypeus* with the lateral edge parallel; anterior edge indented in the middle: *thorax*,

PLATE 43.

posterior angles rather prominent, obtuse: *anterior thighs* with a prominent spine beneath: *anterior tibiæ* dilated towards the tip: *postpectus*, middle incisures edged with opaque black: *venter* with a bright fulvous line extending from between the posterior feet to the middle, where it is gradually a little dilated; behind the middle are two slightly indented large sericeous spots; tip with a small bright fulvous spot.

OBSERVATIONS.

Closely allied to the preceding, I caught it on the margin of St. John's river, in East Florida.

The upper right figure of the plate.

TETYRA ALTERNATA.

SPECIFIC CHARACTER.

Rufous; beneath yellow; scutel with minute, abbreviated black lines.

PLATE 43.

DESCRIPTION.

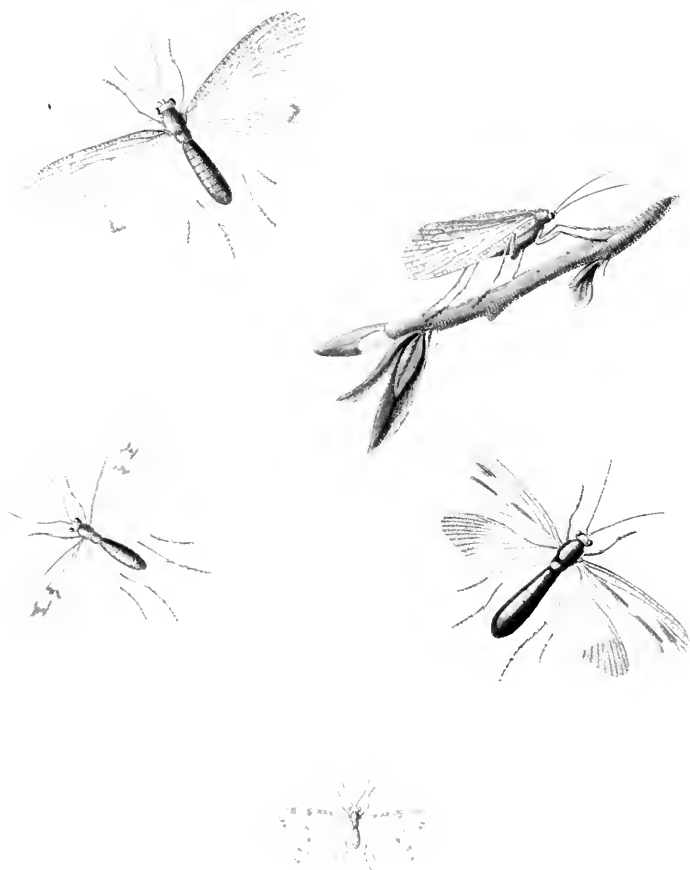
Body above rufous, punctured: *head* narrowed before, and rounded at tip: *antennæ* rufous, basal joint yellow, terminal joint fuscous: *thorax* with the posterior angles obtusely rounded: *scutel* with numerous, very short, transverse black lines; a transverse, slightly raised elliptical line at base, from which proceeds a slightly carinated longitudinal line, becoming obsolete on the middle; tip very slightly emarginate: *hemelytra* on the coriaceous portion marked by the same minute lines as the scutel: *tergum* margined with alternating black, quadrate spots: *beneath* yellow: *feet* simple, rufous: *venter* with two almost obsolete black lines gradually approaching each other to the penultimate segment, where they terminate in a common black spot.

OBSERVATIONS.

This species inhabits the middle states, but it does not occur very frequently.

The lower left figure of the plate.

PLATE 43.



PHRYGANEÆ.

GENERIC CHARACTER.

Antennæ as long as the body, with numerous joints; stemmata two; mandibles none; palpi rather long; inferior wings larger than the others, longitudinally folded; feet elongated, spinous; tarsi elongated, five-jointed, terminal joint with two small nails; abdomen destitute of filaments at tip of the tail.

OBSERVATIONS.

The greater number of these insects venture forth upon the wing during the evening and night, and when disturbed in their resting place in the day, they fly a short distance, and again seek a place of concealment and safety. They frequently enter our houses in the evening, attracted by the light of a candle, around which they fly. The larva lives in the water, and the parents are therefore generally in its vicinity. Some species swarm in large flocks, whilst others are solitary. They are light and active, and run

with much swiftness. When the female is about to deposite her eggs, she ejects a considerable number of them, which remain attached together at the extremity of her abdomen; these she places in a favourable situation, on the stalk or leaf of a water-plant, or other object, from which the young larva may readily pass into the water. Here it soon begins to fabricate a tubular, portable dwelling, which, as respects form, may be compared to that of the clothes-moth. This domicil consists of a silky matter, with various objects attached to the exterior, such as sand, gravel, small pieces of wood or reed, &c., so proportioned that its weight exceeds but little that of the water. As the inhabitant increases in bulk, the tube at length becomes too small, and is necessarily abandoned. Another, of suitable dimensions, is, however, soon constructed, and the little animal is again in a state of security. This artisan, is of a cylindrical, somewhat elongated form, consisting of twelve joints or segments; on the fourth joint is generally a conic tubercle on each side, and on the ultimate segment are two moveable hooks; these projections from the body, appear to be useful as points of support against the sides of the tube. The head is of a firm consistence, fur-

nished with strong mandibles, and two eyes. The feet are six in number, and are not natatory, the anterior pair being shorter and thicker than the others, which are considerably elongated, and not dilated, nor deeply ciliated. Thus constituted, the animal crawls at the bottom of the water, with the feet and the anterior part of the body protruded from the tube, in search of food.

When about to undergo the change into the nymph state, the larva affixes its tube to some permanent object. It then proceeds to close the ends of its dwelling by a silky net, the meshes of which are so small as to prevent the ingress of depredating insects, and yet sufficiently large to admit of a free circulation of water for the purpose of respiration. The head of the nymph is provided with a kind of beak, consisting of two hooks, which are used to force a passage through the net-work. At this period, which occurs in fifteen or twenty days after the change from the larva state, its period of immobility ceases: it departs from its tube, and walks or swims with activity, the feet being fringed for the latter purpose. The young animal now for the first time emerges from the water, and seeks a dry, secure position for its ultimate change

here, after remaining at rest for some minutes, to permit the superfluous moisture to evaporate, it throws off its covering, and soon takes wing in search of a mate. Many species of a smaller size proceed in a different manner; the nymph ascends to the surface of the water, where it is emancipated from its exuvia, which serves as a boat to support the perfected insect, until its wings are sufficiently developed, dried, and prepared for flight.

The word Phryganea is derived from *Φρυγανον*, a bundle or fagot of sticks.

PHRYGANEA SUBFASCIATA.

SPECIFIC CHARACTER.

Pale honey-yellow; superior wings a little dusky, with two transverse blackish spots on each.

PLATE 44.

SYNONYM.

P. SUBFASCIATA. *Nobis. Long's second Expedition*, vol. ii. p. 308.

DESCRIPTION.

Body honey-yellow: *head* a little more tinged with rufous, paler beneath: *antennæ* blackish; first joint yellowish on the inner and inferior irides: *superior wings* dull-ochreous, covered with bullæ, or minute raised points, with a dusky inner and terminal margin; on each are two subequal, transverse, dusky spots, the anterior one near the middle, and connected with the inner margin; the posterior one a little undulated, placed nearer the anterior spot, than to the tip of the wing.

Variety *a*. Spots of the superior wings obsolete, or wanting.

OBSERVATIONS.

Rather smaller than the preceding species, and very distinct from it. It is easily known

PLATE 44.

by the two striking dusky spots on each superior wing. I obtained two or three specimens during a recent excursion with Mr. Maclure, into the interior of Pennsylvania.

The left middle figure of the plate.

PHRYGANEA DOSSUARIA.

SPECIFIC CHARACTER.

Wings with the nervures, and dilated transverse irregular lines, blackish.

DESCRIPTION.

Body pale yellowish-ochreous: *antennæ* dark-brown: *stemmata* brown on the inner side, white on the exterior side: *superior wings* yellowish-white, with blackish nervures, and transverse somewhat dilated, connecting blackish lines, hardly forming bands; of these, one forms a quadrate spot on the costal margin, and one is common near the inner posterior angle; *inferior*

PLATE 44.

wings with two costal spots and terminal margin: *tergum* dusky, segments paler towards their tips.

OBSERVATIONS.

This species was sent to me, with several other interesting insects, by Mr. Charles Pickering, of Salem.

Lowest figure of the plate.

PHRYGANEA SEMIFASCIATA.

SPECIFIC CHARACTER.

Superior wings dull ferruginous, with irregular black lines; a distinct black point near the inner basal angle; inferior wings light ferruginous.

SYNONYM.

P. SEMIFASCIATA. *Nobis. Western Quarterly Reporter*, vol. ii. p. 161.

PLATE 44.

DESCRIPTION.

Body when recent, light olivaceous-green: *head* dark ferruginous above: *eyes* dark-brown, with a moveable black pupil: *mouth* pale: *neck* light-green, with a brown, transverse, hirsute collar on the middle: *thorax* dark ferruginous, hairy, blackish each side: *feet* pale: *superior wings* dull ferruginous, with numerous opaque, transverse, abbreviated, black lines; a small black point at the inner basal angle, and a small transverse, abbreviated dusky line on the inner margin, a little beyond the middle; *inferior wings* light honey-yellow, a blackish, dilated, angulated, semifasciate line near the tip, and a black, anterior spot near the inner margin: *pectus* pale-brownish.

OBSERVATIONS.

This species frequently occurs in various parts of the United States. It is an inhabitant of Pennsylvania and New-Jersey, and I also found specimens near the falls of the Ohio river; and another was sent to me by Dr. T. W. Harris, of Massachusetts. A variety in my cabinet, is

altogether destitute of the semifascia on the inferior wings.

The two upper figures.

PHRYGANEA INTERRUPTA.

SPECIFIC CHARACTER.

Grayish; superior wings with a longitudinal black line, and a smaller one near the tip.

DESCRIPTION.

Body with grayish hair: *eyes* fuscous: *palpi* and *antennæ* black: *superior wings* gray, disk tinged with dusky, a black line extending from the base to near the middle of the terminal edge, and slightly interrupted in its middle; nearer the costal margin, and beyond the middle, is an abbreviated black line; inner margin hoary, immaculate; *inferior wings* dull-ochreous, with a broad blackish tip: *tibiæ* dusky: *tarsi* dusky, the joints pale at their bases.

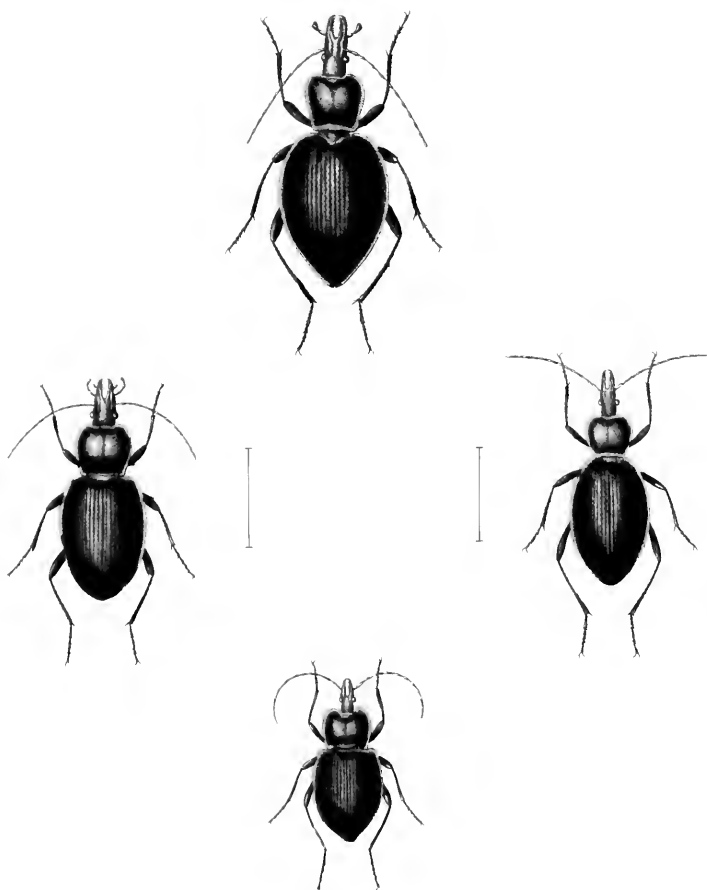
PLATE 44.

OBSERVATIONS.

For this pretty species, I am indebted to my brother, who caught two specimens at Pleasant Mills, New-Jersey.

The right middle figure of the plate.

PLATE 44.



CYCHRUS.

GENERIC CHARACTER.

Head narrower than the thorax; external maxillary and labial palpi dilated, compressed, securiform; labrum elongated, very profoundly emarginate; labium very large, profoundly emarginate, not wider at base than at tip; mandibles narrow, elongated, bidentate near the tip; thorax cordate, slightly, or not at all elevated each side, and not extended behind; abdomen robust, convex; elytra entire, not divided at the suture, carinate each side, and embracing the sides of the abdomen; tarsi alike in the sexes.

OBSERVATIONS.

This is a limited genus, consisting in the time of Fabricius, who constructed it, of only five species. As it now stands, under the reforming hand of Latreille and Dejean, it is certainly more rigidly natural. The latter author, in his "*Species général des Coléop-*

tères," describes nine species, and observes, that they are limited, in their geographical distribution, to Europe, Asiatic Russia, and North America; that although they are, strictly speaking, Carabici, yet they have so much the habit of the Heteromerae, that Linné placed them in his genus Tenebrio.

They are of a blackish colour, glossed with a handsome metallic tint, chiefly of a purplish cast. They inhabit beneath stones, and under prostrate logs.

The word *Cychnus*, is derived from *κυκνος*, the Greek name for a bird.

CYCHRUS VIDUUS.

SPECIFIC CHARACTER.

Black; elytra cupreous-violaceous, polished, humeral edge, and lateral margins of the thorax reflected, the latter contracted behind.

PLATE 45.

SYNONYMS.

CYCHRUS UNICOLOR. *Knoch neue beyträge*, p. 187, tab. 8, fig. 1.

NOBIS. *Trans. Amer. Philos. Soc.* vol. ii. *new series*, p. 71.

CYCHRUS VIDUUS. *Dejean, Spec. Gén. Coléop.* vol. ii. p. 12, No. 9.

DESCRIPTION.

Head black, with a slight blue tinge: *antennæ* brown at tip: *thorax* blackish-blue, disk a little convex, and with an impressed line; lateral margins reflected; widest rather before the middle, and narrowed behind; posterior angles rounded: *elytra* bright coppery-violaceous, or dark purplish, with numerous striae, in which are dilated, confluent punctures: *beneath* black.

OBSERVATIONS.

Probably the largest species of the genus, and is by no means common. The specimen from which the above description, and the annexed figure were taken, was presented to me by Mr. William Hyde of Philadelphia, who

obtained it near the Susquehanna river. Two other specimens have since come into my possession.

This species was first described by Knoch, under the name of *unicolor*; supposing it to be the same with that of Fabricius, and on his authority, I retained the appellation in my "Descriptions of the Carabici and Hydrocanthari;" but after the publication of that paper, being induced to examine the descriptions of Fabricius, and Olivier, I perceived at once that the *unicolor* of Knoch, was not that of those authors. Under this impression, I sent the insect to Count Dejean, under a new name, which he adopted.

I have been thus particular in this statement, in order to record an opinion which I have always entertained, and which every observation tends to confirm. That it is of no consequence whatever, who gives a new name, either in a catalogue or letter, or attached to the insect in his cabinet, or elsewhere; but as it is the describer that incurs the responsibility, his name only ought to be quoted with that of the insect, or other object described by subsequent naturalists.

Under the operation of this principle, the present species is the *C. viduus*, Dejean.

The upper figure of the plate.

SPHÆRODERUS.

GENERIC CHARACTER.

Head narrower than the thorax; external maxillary and labial palpi, with the last joint dilated, securiform, compressed; labrum elongated, profoundly emarginate; labium very large, profoundly emarginate, not wider at base than at tip; mandibles elongated, narrow, bidentate near the tip; the thorax rounded, not elevated on the sides, nor extended behind; abdomen robust, convex; elytra entire, not divided at the suture, carinate each side, embracing the sides of the abdomen; tarsi with the three basal joints, in the male, dilated.

PLATE 45.

OBSERVATIONS.

The present group was separated from CYCHRUS, by Count Dejean, who remarks, that at first view, they resemble some small species of CARABUS, and particularly the *convexus*; that in comparison with the true species of the genus CYCHRUS, the head is a little less elongated, the antennæ a little shorter, and the thorax, instead of being cordate, is rounded, oval or orbicular, convex, not elevated on the sides, nor behind; the first and second joints of the anterior tarsi in the male, are much dilated, the first, truncate-triangular; the second, quadrate broader than long; the third is less dilated, cordate.

The word SPHÆRODERUS, is derived from the Greek words σφαῖρα, sphere, and Δέρον, neck, in allusion to the form of the thorax.

PLATE 45.

SPHÆRODERUS STENOSTOMUS.

SPECIFIC CHARACTER.

Black; elytra dark cupreous, basal thoracic lines distinct.

SYNONYMS.

CYCHRUS STENOSTOMUS. *Weber. Obs. Ent.* p. 43.

Knoch, neue Beytr. p. 190, pl. 8, f. 13.

Schonh. Syn. p. 166.

Nobis. Trans. Amer. Philos. Soc. (new series) vol. ii. p. 72.

SPHÆRODERUS STENOSTOMUS. *Dejean, Spec. Coléopt.* vol. ii. p. 15.

DESCRIPTION.

Head black, glabrous, impunctured: *antennæ* brownish towards their tips: *thorax* black, tinged with blue, rounded, widest in the middle, contracted behind; base narrower than the elytra, punctured; basal edge rectilinear; dorsal line very distinct; basal lines profoundly impressed, obtuse, punctured: *elytra* dark cupreous, striae numerous, obtuse; interstitial lines narrower

than the striæ, obtuse; edge dark blue; humeral edge not dilated nor reflected: *epipleura* punctured: *pectus* punctured at base: *postpectus* and *venter* each side at base, punctured.

OBSERVATIONS.

This species is not uncommon in Pennsylvania. I have also received a specimen from Mr. Charles Pickering, taken in Massachusetts.

The left figure of the plate.



SPHÆRODERUS BILOBUS.

SPECIFIC CHARACTER.

Violaceous; beneath black; margins not reflected; basal thoracic lines obsolete.

PLATE 45.

SYNONYMS.

CYCHRUS BILOBUS. *Nob. Trans. Amer. Phil. Soc. (new series)* vol. ii. p. 73.

SPHÆRODERUS BILOBUS. *Dejean, Spec. Gén. Coléopt.* vol. ii. p. 16.

DESCRIPTION.

Body beneath black: *head* black, with a slight violaceous tint: *antennæ* and *palpi* pale piceous: *thorax* cupreous-violaceous, polished, broadest rather before the middle, much narrowed behind; lateral margin not dilated nor reflected; base depressed and much punctured; basal lines obsolete; basal edge rectilinear, not wider than the pedicle of the postpectus; disk somewhat bilobated, being convex each side, and gradually indented in the middle by the dorsal line; anterior margin depressed, and rugose in the middle: *elytra* cupreous-violaceous, *striæ* numerous, punctured: *pectus* beneath, *postpectus* and *abdomen* each side, punctured.

PLATE 45.

OBSERVATIONS.

This is somewhat smaller than the *stenotomus*, from which it is very distinct, and is the most brilliant species we have. I have not yet met with it in the Atlantic states. The first specimen was obtained in Missouri, and I caught another in the North-Western Territory, when travelling over that region with Major Long's party.

The right figure of the plate.

SCAPHINOTUS.

GENERIC CHARACTER.

Head narrower than the thorax; external maxillary, and labial palpi, with the last joint dilated, compressed, securiform; labrum elongated, profoundly emarginate; labium very large, profoundly emarginate, not wider at base than at tip; mandibles elongated, narrow, bidentate near the tip; thorax with the lateral margins reflected, posterior angles extended; elytra entire.

PLATE 45.

not divided at the suture, prominently carinate each side, and embracing the sides of the abdomen; tarsi with the three basal joints of the anterior feet a little dilated in the male.

OBSERVATIONS.

Separated by Latreille, from the genus *CYCHRUS*, and consisting as yet, of a single species only, though Dejean supposes that the *CYCHRUS unicolor* of Fabricius, will constitute a second species, but the latter does not appear to be at present known to entomologists. This genus is most closely allied to *CYCHRUS* and *SPHERODERUS*, but particularly to the former; the thorax, however, is of a different form, and the anterior tarsi of the male are a little dilated.

We remarked in our Preface, p. vi. that "care has been taken that species of different genera be not represented in the same plate." It seems therefore proper, that we should state the reason why we have not complied with this intention in the annexed plate, where three genera are introduced. That plate was engraved before the author left Philadelphia, on a visit to New-Harmony, Indiana, his present residence,

and it was only a few months since, that he received the second volume of Dejean's *Species Général des Coléoptères*, published last year, in which the distinguished author has reformed the genus *CYCHRUS*. But as the object of that intention was, that the work might be "bound up, when completed, agreeably to systematic order in the succession of genera," the author conceives that no disadvantage can ever arise from this circumstance, as these genera are so closely allied, that it seems hardly possible, any future discovery shall disturb their proximity.

SCAPHINOTUS ELEVATUS.

SPECIFIC CHARACTER.

Blackish; elytra violaceous-cupreous, polished; hardly narrower behind.

PLATE 45.

SYNONYMS.

CARABUS ELEVATUS. *Fabr. Ent. Syst.* i. p. 132.

Oliv. Ins. vol. iii. p. 46, pl. 7, fig. 82.

Oliv. Enc. Meth. (Carabe) p. 334.

Linn. Syst. Nat. Gmel. p. 1967.

CYCHRUS ELEVATUS. *Fabr. Syst. Eleuth.* i. p. 166.

Knoch, neue Beytr. p. 188, pl. 8, fig. 12.

Latr. Hist. Nat. 8, p. 289.

Nob. Trans. Amer. Philos. Soc. vol. ii. (new series) p. 71.

Schonh. Syn. p. 166.

SCAPHINOTUS ELEVATUS. *Dejean, Spec. Gén.* vol. ii. p. 17.

DESCRIPTION.

Head black, very slightly tinted with violet, impunctured: *antennæ* brownish towards the tips: *thorax* black, slightly tinted with violaceous, the sides gradually more reflected to the hind angles, hardly contractly behind; disk concave, with small, numerous, irregular, punctures; base nearly as broad as the base of the elytra; basal angles prominent, acute: *elytra* violaceous-cupreous, brilliant; *striæ* numerous,

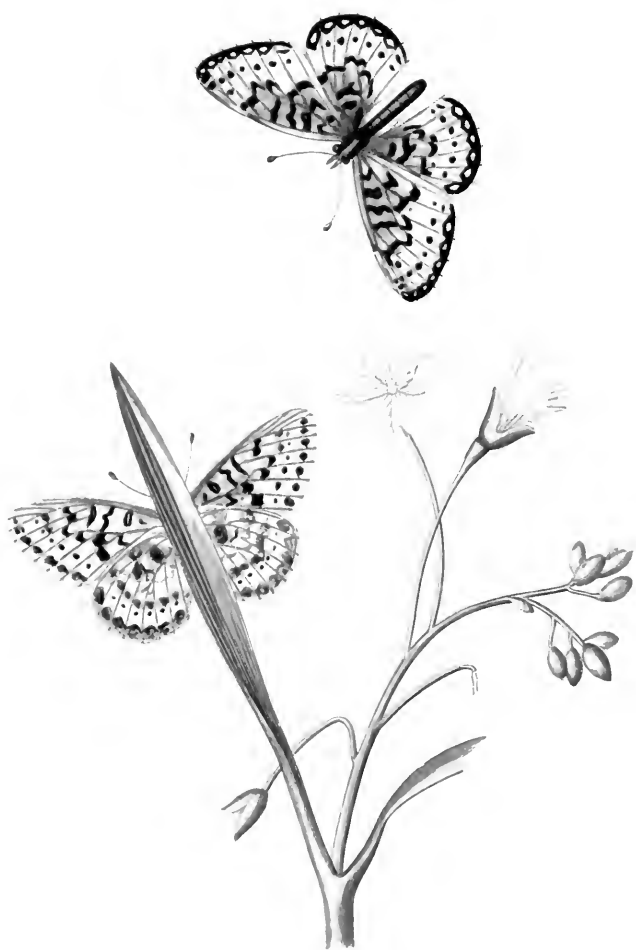
obtuse; intervening lines narrower than the striae, obtuse; humeral edge dilated, reflected, elevated, and rounded: *epipleura* confluent punctured: *pectus* with a few punctures at base; lateral margin with minute punctures: *postpectus* and *venter*, each side at base, with large punctures.

OBSERVATIONS.

This species was supposed, by all the authors, previous to Knoch, to be a native of South America, but that entomologist determined its native country, by receiving specimens from the late Dr. F. V. Melsheimer, of Hanover, Pennsylvania.

The lowest figure of the plate.

PLATE 45.



MELITÆ.

GENERIC CHARACTER.

Antennæ with a short, somewhat broad, compressed terminal club; palpi divaricating, hairy, second joint compressed, terminal joint acicular, half the length of the preceding joint; inferior wings suborbicular, somewhat checkered beneath; anterior feet short, feeble; tarsi with double nails.

OBSERVATIONS.

The distinction between this genus and *ARGYNNIS*, is very slight, too much so, we think, to justify the continuation of it, except perhaps as a subgenus. We have set down the characters pretty much as we find them in the authors, and, although it is obvious, that they do not agree very well with the species we have placed under it, yet there cannot be the slightest doubt of the correctness of the reference. Perhaps the only striking character by which the species may be separated from those of the above

mentioned genus, is that of the somewhat checkered appearance of the inferior page of the posterior wings. A more remarkable distinction may be observed in the larvæ, which are not armed with spines as in ARGYNNIS, but are pubescent, with small fleshy tubercles on the body; the pupa is suspended by the tail.

The genus under the present name, was separated from the Linnæan PAPILIO, by Fabricius.



MELITÆ MYRINA.

SPECIFIC CHARACTER.

Wings slightly indented, fulvous, with black spots and undulated lines; beneath with more than thirty silvery spots, and an ocellate spot near the base of the inferior ones.

PLATE 46.

SYNONYMS.

PAPILIO MYRINA. *Cramer*, ii. p. 141, pl. 189,
fig. B. C.
Fabr. Ent. Emend. p. 145.
Herbst. Natursyst. ix. p. 178, pl. 255,
fig. 3, 4.

DESCRIPTION.

Wings fulvous, slightly indented on the exterior edges; *superior wings* with black, transverse, undulated, and interrupted lines, occupying the basal portion to a considerable distance beyond the middle, the first sublunate, the second double; towards the tip, a transverse series of black dots, then of black angles, confluent with the black nodose edging; inferior surface paler, the series of black dots obsolete; immediately before this series, and near the anterior margin, are two somewhat silvery spots; a somewhat silvery spot within each of the black submarginal angles, the margin destitute of black; *inferior wings* with two, much undulated, nearly parallel lines, from the middle of the anterior margin curve round and terminate

near the base, near which they become confused, they enclose a black spot; a series of black dots, angles, and margin, as in the superior wings; beneath tinged with ferruginous, and varied with ochreous spots, with four transverse series of silvery spots; the second series interrupted by ochreous spots, between the first and second series is a small silvery ocellate spot with a black pupil; beyond the third series, is a series of obsolete brown dots.

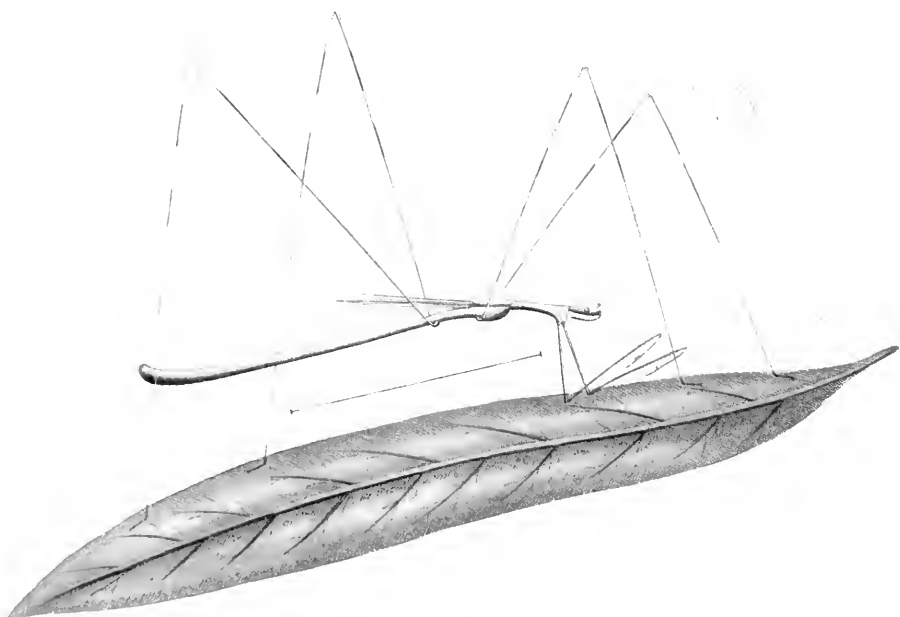
OBSERVATIONS.

This pretty little species is common in various parts of the United States, extending as far south as Florida, and north at least to Massachusetts, from whence Dr. T. W. Harris sent me a specimen. It resembles several foreign species, and particularly the *A. selene*, for which it may be easily mistaken, but on comparison, that species will be found to have the third series of silvery spots widely interrupted in the middle, and the small ocellate spot near the base is not silvery, but black, with a pale pupil; still, however, they are so very closely allied, that in considering them as distinct species, I

rely on the authors whose synonyms are quoted above.

The plant is the **CLAYTONIA VIRGINICA**.

PLATE 46.



PLOIARIA.

GENERIC CHARACTER.

Body elongated, filiform; feet ambulatory, very long, with distinct nails; anterior pair shortest, raptatory, with elongated coxæ; eyes moderate; labrum very short; antennæ elongated, setaceous, four-jointed; beak inflected.

OBSERVATIONS.

Such is the particular form and appearance of the antennæ in insects of this genus, that on a slight inspection, a person would almost be disposed to pronounce them ambulatory, and that there are therefore eight feet. But no true insect yet known, has more or less than six feet. As respects the remarkably long and slender form of some of the species, they have considerable affinity for the genus *SPECTRUM*, and the anterior pair of feet may be compared to those of *MANTIS* and *EMPUSA*, with equal aptitude. These feet are much shorter than the others, are used almost altogether for the pur-

pose of seizing and conveying the prey to their mouth; whilst the two posterior pairs support the body, and move it from place to place. Their movements are rather slow and unsteady, moving up and down upon their legs as they proceed forwards, in the manner of the Crane-fly (TIPULA). They feed on small insects. Scopoli, first established this genus; the species were referred to CIMEX, by Linné and others, and Fabricius, unacquainted with what Scopoli had done, perceived the necessity of forming a genus for them, and this he called EMESA, of which he describes four species; three belonging to America, and one to the East Indies. The CIMEX *vagabundus*, Linn., of Europe, is a fifth species, which, however, Fabricius placed in his genus GERRIS.

The word PLOIARIA, is of uncertain origin, Mr. Dumeril supposes it to have been derived from the Greek name for a small vessel, πλοῖάριον, (*navicula*.)

PLATE 47.

PLOIARIA BREVIPENNIS.

SPECIFIC CHARACTER.

Fuscous-rufous, glabrous; wings abbreviated; feet near the knees annulated.

DESCRIPTION.

Body fuscous, more or less tinged with sanguineous: *antennæ* very slender, with a white annulus at the tip of the first joint: *anterior tibiæ* with the spines black at tip: *nervures* of the wings brownish: *intermediate* and *posterior feet* with the thighs near the tip, and *tibiæ* near the base biannulate with whitish: *tergum* beneath the wings bright sanguineous.

OBSERVATIONS.

This is a very common insect, and is often found even in the city of Philadelphia. It inhabits out-houses, where it may be observed generally motionless on the walls. When dis-

PLATE 47.

turbed, it moves its body up and down on its legs, and at the same time advances slowly forwards.

The line denotes the natural size.

PLATE 47.



MALACHIUS.

GENERIC CHARACTER.

Body furnished with cocardes; head retracted to the eyes within the thorax; antennæ ten-jointed, filiform, serrated; mandibles emarginate; labium entire; palpi filiform; tarsi simple, nails with a tooth beneath; elytra flexible.

OBSERVATIONS.

Linneus referred these insects to his genus **CANTHARIS**; from which his learned successor, Fabricius, separated them, and constituted a group under the present name, derived from the Greek word *μαλακός*, which means *soft*, *delicate*, in allusion to the consistence of the body. They differ from the genus **DASYTES**, Payk. in being less elongated, and furnished with the *cocardes*, their antennæ also are placed nearer together at base; otherwise the two genera are closely allied.

These insects are frequent in some situations on flowers, the nectareous juices of which they

appear to extract, though it has been asserted, but we know not upon what authority, that in addition to their liquid food they prey also upon insects.

When alarmed for their safety, the *cocardes* are suddenly protruded, and when reassured of security, these singular organs are retracted, so that no remnant of them remains in view. The *cocardes* are three-lobed bodies, of a vivid red colour, and vesicular consistence, situated one on each side near the anterior angles of the thorax, and another on each side at the base of the abdomen. Their uses are altogether unknown, but we cannot suppose them to be of primary importance, since one, and indeed all of them have been cut off without diminishing the agility of the insect, or subjecting it to any apparent inconvenience. Like the retractile cervical appendage of the larvæ of PAPILIONES, it may possibly serve to repel their enemies. Olivier supposes that the larvæ of the MALACHIUS live in wood. Latreille informs us that in some of the species one sex has an appendice at the tip of each elytrum, in the shape of a hook, which is seized by the mandibles of the opposite sex, in order to arrest the fugitive.

MALACHIUS BIPUNCTATUS.

SPECIFIC CHARACTER.

Thorax rufous, with two remote black spots; elytra blue; abdomen sanguineous.

SYNONYM.

M. BIPUNCTATUS. *Nobis. Journ. Acad. Nat. Sciences*, vol. iii. p. 185.

DESCRIPTION.

Head black, with a slight greenish tinge; all before a line drawn between the anterior canthi of the eyes, including the antennæ, yellow; *mandibles* and *terminal joints* of the *palpi* black; *thorax* yellowish-rufous, with two small, remote, rounded black dots; posterior submargin somewhat indented: *elytra* blue or greenish: *pectus* rufous: *postpectus* and *feet* black: *abdomen* sanguineous.

PLATE 48.

OBSERVATION.

This fine species is an inhabitant of the Arkansas region, near the Rocky Mountains, where I captured two specimens. In magnitude it exceeds any other North American species yet known. The second joint of the antennæ in the male is dilated and irregular.

The lowest figure of the plate.

MALACHIUS TRICOLOR.

SPECIFIC CHARACTER.

Head, postpectus, and feet black; labrum and thorax rufous; abdomen rufo-testaceous.

SYNONYM.

M. TRICOLOR. *Nobis. Journ. Acad. Nat. Sciences*, vol. iii. p. 182.

PLATE 48.

DESCRIPTION.

Head black: *labrum*, *clypeus* on its anterior margin and *palpi* at base, pale rufous: *antennæ* pale rufous, dusky at tip: *thorax* transverse, nearly oval, rather short, rufous, immaculate: *elytra* dark bluish-green, or somewhat violaceous; middle of the lateral edge obsoletely piceous: *postpectus* and *feet* deep black: *venter* testaceous.

Variety, *a*. Elytra blue; venter and thorax sanguineous.

OBSERVATIONS.

This species was taken on the Mississippi, and specimens also occurred near the Rocky Mountains. It is as large as *M. 4*—*maculatus*, Fabr., and larger than *M. thoracicus*, Fabr., which it much resembles. The variety was sent me from Massachusetts by Mr. Charles Pickering.

The right figure of the plate.

PLATE 48.

MALACHIUS NIGRICEPS.

SPECIFIC CHARACTER.

Thorax rufous, with a large black spot ; elytra blue ; venter sanguineous.

SYNONYM.

M. NIGRICEPS. *Nobis. Journ. Acad. Nat. Sciences*, vol. iii. p. 183.

DESCRIPTION.

Head deep black, pale testaceous or rufous before : *thorax* rufous, with a large black spot, sometimes composed of two, dilated, confluent ones, and not attaining the anterior margin : *elytra* violaceous, blue, or greenish : *pectus* rufous, at the origin of the feet black : *postpectus* black : *feet* black : *thighs* sometimes rufous, particularly the anterior ones : *venter* sanguineous.

Variety, *a.* Thorax entirely black.

PLATE 48

OBSERVATIONS.

Distinguishable from the *tricolor* by the black spot of the thorax, and by the proportion of this part, which is comparatively longer than in that insect. Its antennæ present the remarkable character of the dilatation and irregularity of the second joint of the antennæ.

The upper middle figure of the plate.

MALACHIUS VITTATUS.

SPECIFIC CHARACTER.

Thorax rufous, with a large black spot ; elytra blue, margin and suture rufous.

SYNONYM.

M. VITTATUS. *Nobis. Journ. Acad. Nat. Sciences*, vol. iii. p. 184.

PLATE 48.

DESCRIPTION.

Head black; *labrum* and base of the *antennæ* rufous: *thorax* rufous, with a dorsal black spot composed of two confluent ones, not reaching the anterior margin: *elytra* bright greenish-blue; exterior margin, suture, and tip rufous; this colour is a little dilated behind the humerus: *pectus* rufous; about the base of the feet black: *postpectus* and *venter* black, incisures of the latter edged with testaceous: *feet* black; anterior pairs of tibiæ often piceous.

OBSERVATIONS.

This species is somewhat smaller than *M. quadrimaculatus*. It is closely allied to *M. tricolor*. The second joint of the antennæ of the male is dilated and irregular. Mr. Thomas Nuttall first obtained specimens of the *vittatus* in the Mississippi region, where I have since met with it.

The upper figure of the plate.

PLATE 48.

MALACHIUS OTIOSUS.

SPECIFIC CHARACTER.

Thorax rufous, with a dilated longitudinal line; antennæ and elytra black.

SYNONYM.

MALACHIUS NIGRIPENNIS. *Nobis. Journ. Acad. Nat. Sciences*, vol. iii. p. 184.

DESCRIPTION.

Body black, inconspicuously hairy: *head* with three obtuse indentations between the eyes; *antennæ* black; *labrum* and *clypeus* before, rufous: *thorax* rufous, with a much dilated black line from the anterior to the posterior edge: *elytra* black, with a very slight violaceous tinge: *pectus* pale rufous, or testaceous; origin of the feet black: *postpectus* black: *venter* black, segments with more or less dilated, sanguineous margins; sometimes entirely sanguineous: *feet* black; *anterior thighs* sometimes pale.

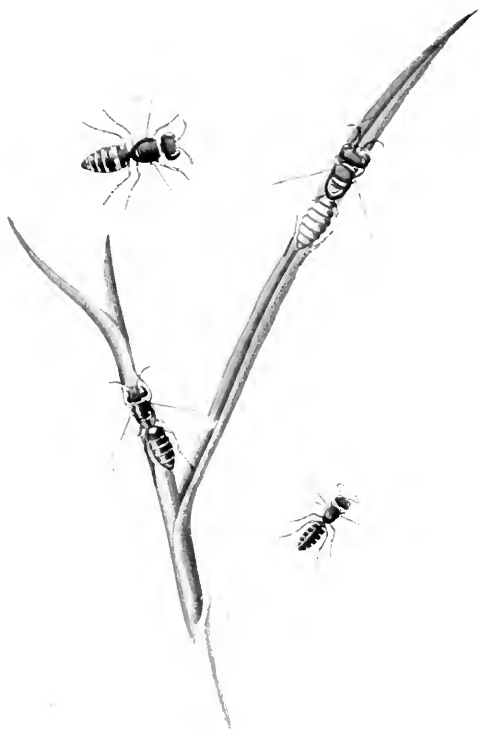
OBSERVATIONS.

This species is readily separable from *M. nigriceps* by its inferior size and blackish elytra and antennæ, and by the circumstance that the black line of the thorax is continued to the anterior edge.

Count Dejean informs me the name *nigripennis* is preoccupied in this genus; I have therefore been compelled to change it.

The lower middle figure.

PLATE 48.



PHILANTHUS.

GENERIC CHARACTER.

Labrum concealed; eyes not extending to the posterior part of the head, very slightly emarginate; stemmata three; antennæ thicker towards the tip, inserted in the middle of the face; nasus trilobate; mandibles simple; radial cell one, elongated, acute at tip; cubital cells three, the first large, the second small, sessile, receiving the first recurrent nervure, the third subquadrate, elongated at its exterior inferior angle and receiving the second recurrent nervure, an imperfect fourth cellule sometimes exists; feet rather short.

OBSERVATIONS.

In the present order of insects called Hymenoptera by Linné, are many species whose manners are highly interesting; living together harmoniously in large communities, and labouring for the attainment of a common object, such species exhibit such eminent proofs of

intelligence, as to stagger the vain theorist in the midst of his speculations, and to render insecure the distinction which he has endeavoured to establish between the blindness of instinct and the splendid nature of reason.

But the far greater portion associate by pairs, in their perfect state, for the important purpose of continuing their race, and of these are the species of the genus under consideration. It has been long known that the *PHILANTHI* are parasitic; the female digs a hole in the earth for the reception of her egg, with which she places the body of an insect that she had killed for the nurture of her young; she then completes her task by covering the hole with earth. Latreille gives the following interesting account of the *P. apivorus* of Europe. It is a dangerous enemy of the domestic bee. The female digs a horizontal gallery about a foot in depth in a sloping bank of light earth exposed to the influence of the sun; she separates the earth, and carries it to the surface by means of her mandibles and feet. When the nest is thus completed, the parent visits the neighbouring flowers for the purpose of obtaining a honey bee; she seizes her victim, and kills it by piercing it with her sting at the junction of the

head with the thorax, or of the thorax with the abdomen, and transports it to the bottom of the gallery. As each female deposits at least five or six eggs, the consequence is that the same number of bees must be destroyed. In an extent of ground about one hundred and twenty feet long, Mr. Latreille counted from fifty to sixty females actively employed in making their nests, these of course destroyed about three hundred bees. Let us then suppose a surface of country about six miles square, a fiftieth part of which would afford a proper situation for the operations of the females of this species of *PHILANTHUS*; these would be a sufficient number to destroy fifteen thousand of those useful insects. The eggs are white, nearly cylindrical, rounded at the two ends. The larvæ resemble those of the bee. The covering of the pupa is a thin pellicle.

Fabricius first applied the name *PHILANTHUS*; but Latreille divided the group which his predecessor established under that name into two genera, retaining the appellation for the present group, and applying that of *CERCERES* to such as have denticulated mandibles, and the second cubital cellule petiolated. The former were

called SIMBLEPHILUS, and the latter PHILANTHUS, by Jurine.

The name of this genus is compounded of the Greek words φιλάω, I love, and ανθος, a flower.

PHILANTHUS CANALICULATUS.

SPECIFIC CHARACTER.

Pale yellow; vertex, disk of the thorax, and incisures of the tergum reddish-brown.

SYNONYM.

P. CANALICULATUS. *Nobis. Western Quarterly Reporter*, vol. ii. p. 79.

DESCRIPTION.

Body pale yellow: *vertex* reddish-brown; *front* with two longitudinal reddish-brown lines passing through the base of the antennæ; *antennæ* rufous, black at tip: *mandibles* black at tip: *superior wings* with a longitudinal brownish line on the middle from near the base to the tip;

PLATE 49.

radial cellule rounded at tip, and at its inferior angle descending to meet the superior angle of the second cubital cellule, which is triangular: *tergum* with a transverse groove on the middle of each segment, and a marginal smaller one; incisures reddish-brown.

OBSERVATIONS.

When traversing the Arkansaw region with Major Long's party, I obtained a single specimen of this insect, which is a male; it is so very similar in general appearance and colour to *CERCERIS bidentata*, Nob. that but for its generic differences, I should almost have been led to consider as a mere sexual variety of that species. But it cannot be placed in the genus *CERCERIS*, as the mandibles are entirely unarmed within, and the second cubital cellule is not petiolated, and the eyes are not emarginated.

The upper right figure of the plate.

PLATE 49.

PHILANTHUS ZONATUS.

SPECIFIC CHARACTER.

Black; front, two lines on the thorax and posterior submargins of the segments of the tergum, yellow; feet rufous.

SYNONYM.

P. ZONATUS. *Nobis. Western Quarterly Reporter*, vol. ii. p. 79.

DESCRIPTION.

Body above black: *front* yellow, with two black lines descending from the black vertex to the origin of the antennæ; *antennæ* and *mandibles* rufous, black at tip; base of the head rufous: *thorax*, first segment and *scutel*, each with a yellow line; a large rufous spot each side behind the scutel: *superior wings* with a dusky margin towards the tip; *costal nervure* dull rufous in the middle; *radial cellule* rounded at tip, and at its inferior edge descending in an

angle to meet the superior angle of the second cubital cellule, which is triangular: *tergum* with an obsolete transverse groove on the middle of each segment, and a marginal slender one; posterior submargins yellow: *feet* rufous: *pectus* black: *venter* dull rufous.

OBSERVATIONS.

The specimen which served for this description is a male, which was taken in the same country as the preceding. It corresponds with the *canaliculatus* in the simple form of its eyes and mandibles, and in the shape of the radial and second cubital cellules. These characters justify the separation of the two species from the foregoing, into a distinct subgenus.

The lower left figure of the plate.

PLATE 49.

PHILANTHUS VERTILABRIS.

SPECIFIC CHARACTER.

Black; thorax with a line on the interior and posterior margins, and tergum, with four or five bands of which the anterior one is broadest, yellow.

SYNONYM.

P. VERTILABRIS. *Fabr. Syst. Piez.* p. 303.
Coqueb. Ill. Icon. p. 96, pl. 22, fig. 2.

DESCRIPTION.

Head black; beneath the antennæ yellow; *antennæ* beneath yellow: *thorax* with confluent punctures black; a transverse line before and another behind yellow: *wings* tinged with dull yellowish: *feet* pale rufous: *tibiæ* yellowish on the exterior side: *tergum* with large, deeply impressed, confluent punctures; first segment with a yellow spot each side; second segment with a broad yellow band occupying the basal

half, sometimes slightly interrupted in the middle ; third, fourth, and fifth segments with a band on their hind margins, broader each side ; sixth segment with a spot each side.

OBSERVATIONS.

Coquebert gave a figure of this species, with a magnified representation of the head, abdomen, and a wing. It is stated to be an inhabitant of Carolina, but it is also found in Missouri and Pennsylvania.

The upper left figure of the plate.

PHILANTHUS POLITUS.

SPECIFIC CHARACTER.

Black, polished ; first segment of the tergum with two whitish spots, the other segments with a spot each side, connected by a whitish band.

PLATE 49.

SYNONYM.

P. POLITUS. *Nobis. Long's Second Expedition,*
p. 343.

DESCRIPTION.

Hypostoma, mandibles at base, and anterior line of the orbits as high as the emargination, whitish; *antennæ* beyond the third joint on the inferior side rufous brown, a whitish spot on the basal joint: *thorax* with small, irregular punctures; *collar* with two transverse spots; *wing-scale*, and transverse line on the *scutel*, whitish: *wings* a little dusky towards the tip: *pleura* with a double whitish spot beneath the superior wings: *thighs* black; *knees* and *tibiæ*, excepting a black line on the inner side, whitish; *tarsi* dusky: *tergum* polished; first segment with a transverse ovate spot each side; remaining segments each with a transverse quadrate spot each side, touching the posterior margin, and connected along this margin by a slender, undulated band.

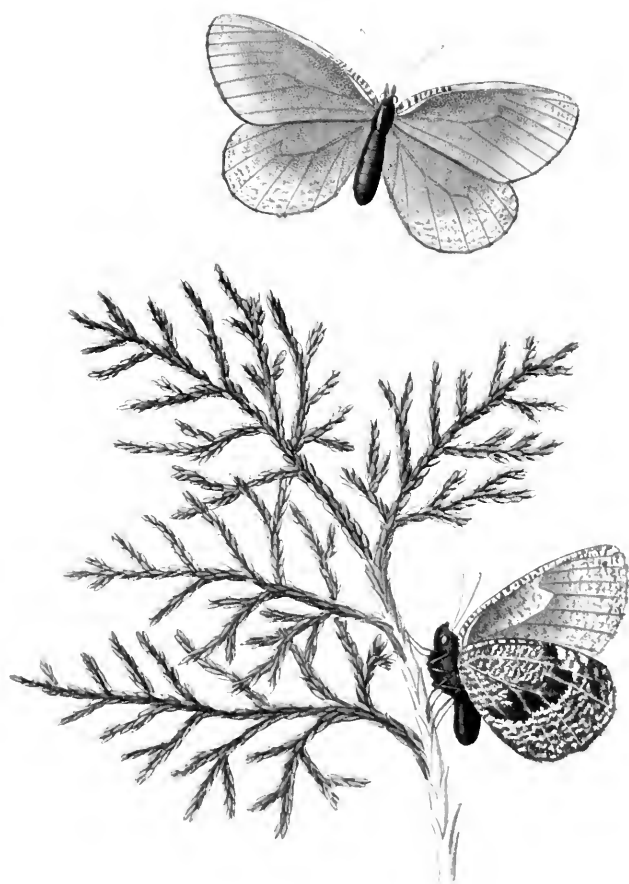
PLATE 49.

OBSERVATIONS.

An inhabitant of Pennsylvania. It may be readily known from the preceding, by its polished appearance.

The lower right figure of the plate.

PLATE 49.



HIPPARCHIA.

For Generic Characters, see *HIPPARCHIA andromacha*.

HIPPARCHIA SEMIDEA.

SPECIFIC CHARACTER.

Wings brown ; inferior pair marbled beneath.

DESCRIPTION.

Body black, immaculate : *antennæ* fuscous, beneath bright rufous towards the tip, the club very gradually formed : *superior wings* brown, the costal margin with alternate transverse black and yellow lines, exterior margin with alternate black and white spots ; beneath dull ochreous, with obsolete, transverse, abbreviated, blackish lines ; costal and broad tip margin alternated with vivid black and white lines ; *inferior*

PLATE 50.

wings dark brown; towards the posterior margin obscure ochreous, with obsolete, abbreviated, blackish, transverse lines; posterior margin with a slender black line and dirty white edging; beneath marbled with black and white, the black prevailing across the middle and base of the wing.

OBSERVATIONS.

Many of the insects belonging to this genus are decorated with beautiful colours, and with eye-like spots upon the wings; but the present species is of a more simple and unassuming character. Without any imposing attractions to arrest the eye, it exhibits an agreeable neatness in the disposition of the contrasting colours, on the inferior surface of the wings. But its chief title to our attention is the great altitude of its native climate. It inhabits the bald summits of the White Mountains of New-Hampshire, and appears to be limited to that inhospitable region. Mr. T. Nuttall sent me a specimen some time since, taken by himself; and Mr. Charles Pickering of Salem, has recently presented me with an individual in an

excellent state of preservation, from which the accompanying plate has been taken.

The plate exhibits two views of the insect.

PLATE 50.

I



I



I

BOLETOPHAGUS.

GENERIC CHARACTER.

Body very rough, oval, convex; head rather large, without a neck; eyes almost bisected by the prominent margin; antennæ arcuated, inserted beneath the margin, thicker towards the tip; mandibles destitute of a horny nail; palpi filiform, terminal joint of the maxillaries cylindrical: thorax transverse, as broad as the elytra, the anterior angles projected forwards: scutellum small, rounded: elytra covering the tergum.

OBSERVATIONS.

In consequence of the rough unequal character of the surface of these insects, their appearance is repulsive to the common observer, but in the estimation of an entomologist, their claims to his attention are in no respect diminished by any supposed departure from a particular standard of beauty. They have been referred by the different authors to the genera *OPATRUM*, *TROX*, *DIAPERIS*, and even *SILPHA* and *HISPA*. But

PLATE 51.

Latreille, perceiving that their generic characters were not conformable to any group already existing in the system, separated them under the name of **ELEDONA**. This name ought to have been adopted, having the unalienable right of priority over that of **BOLETOPHAGUS**, subsequently applied by the justly celebrated Illiger. But as the present designation is preferred by Fabricius, Dejean, Leach, and the German entomologists, we for the present acquiesce in the use of it. The species frequent fungi, whence the generic name *Βολίτης*, *boletus*, and *φαγῶν*, *I eat*.

BOLETOPHAGUS CORNUTUS.

SPECIFIC CHARACTER.

Thorax with two slightly incurved horns, which are hairy beneath.

PLATE 51.

SYNONYMS.

OPATRUM BIFURCUM. *Fabr. Supp.* p. 40.

OPATRUM CORNUTUM. *Panz. Faun. Amer. Bor.*

Prodr. pl. 1, fig. 5, *a b*, and fig. 6, *a b*.

BOLETOPHAGUS CORNUTUS. *Fabr. Syst. Eleuth.*

vol. i. p. 112. *Schonh. Syn.* vol. i. p. 120.

ELEDONA CORNUTA. *Latr. Hist. Nat. Crust.*

et Ins. vol. x. p. 312.

DESCRIPTION.

Body brown: *head* with a few small tubercles; and on the anterior edge an elevated, double, acute horn: *thorax* irregularly granulated, with two prominent, porrect, incurved horns, slightly dilated at tip, hairy beneath, and rather longer than the head; lateral edge denticulated: *elytra* with elevated, abbreviated lines and tubercles; at tip somewhat abruptly deflected.

FEMALE, destitute of the elevated double horn on the anterior edge of the clypeus: *thorax* with two elevated tubercles, vertical and truncated.

PLATE 51.

OBSERVATIONS.

This species frequently occurs in various parts of the United States, in fungi. It is very distinct from any other known insect of the genus. The thoracic processes, as well as that of the head, afford very good and striking characters. We have never been so successful as to obtain the above quoted work of Panzer, and we therefore refer to it through other authors.

The two upper figures of the plate represent the male in different positions.

The lower right figures exhibit the female. The lines show the natural length.

BOLETOPIAGUS CORTICOLA

SPECIFIC CHARACTER.

Head and thorax unarmed: elytra with elevated, abbreviated lines and tubercles.

PLATE 51.

DESCRIPTION.

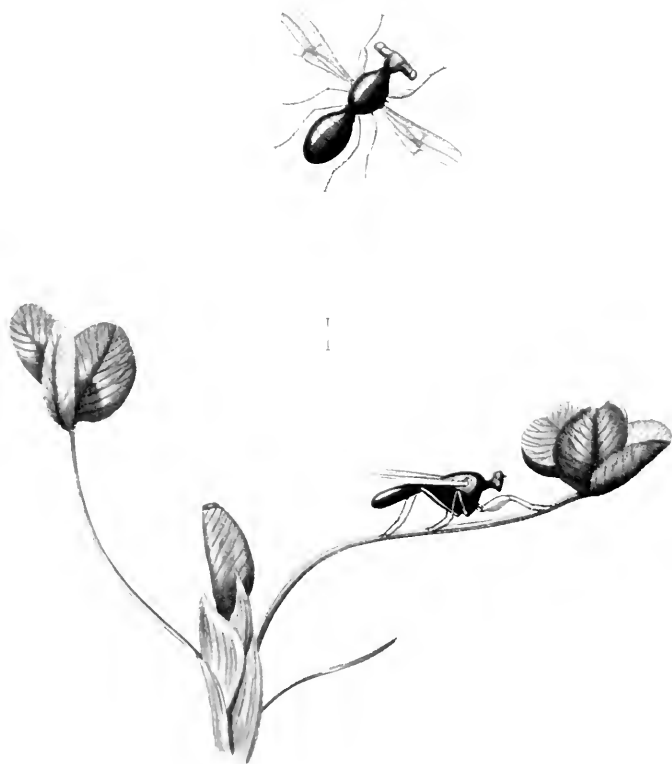
Body brown: *head* slightly granulated; anterior edge a little reflected, and very slightly emarginate at tip: *thorax* granulated, and somewhat canaliculate; lateral edge denticulated; posterior angle an obtuse spire: elytra with regular series of elevated, interrupted lines, and alternating with series of elevated tubercles.

OBSERVATIONS.

For this species I am indebted to Dr. John F. Melsheimer, who sent me several specimens under the name which I have adopted. He informs me that it was caught in Virginia, in October, under the bark of the pine.

The lower left figures of the plate represent the species in two positions. The line shows the natural length.

PLATE 51.



SPHYRACEPHALA.

ESSENTIAL CHARACTER.

Head extended each side in a process which is oculiferous at tip; antennæ inserted on the front, third joint rounded, compressed, setigerous at tip.

NATURAL CHARACTER.

Head subtriangular; eyes pedunculated, peduncles very short, robust; stemmata approximate; antennæ distant, robust, short, nearly parallel to the peduncles, three-jointed; first joint very short, almost concealed; second joint obconic, ciliated at tip; third joint orbicular, setigerous at tip; proboscis bilabiated; palpi elevated, conic; metathorax with a conic spine each side beneath the wings; scutel two-spined; poisers naked; wings incumbent; feet moderate; anterior thighs dilated; anterior tibiæ a little arcuated.

PLATE 52.

OBSERVATIONS.

Two genera of dipterous insects have already been constituted, in which the eyes are pedunculated, or situated at the extremity of elongated, immovable processes of the head: these are *DIOPSIS* of Linneus, and *ACHIAS* of Fabricius. The present genus differs from the former, however, in not having the antennæ situated on the peduncles of the eyes, but on the front, as in *ACHIAS*. It agrees with the former in the terminal origin of the seta of the antennæ, and in the rotundity of the third joint of those organs, as well as in the armature of the scutellum and lateral part of the trunk. In the little known genus *ACHIAS*, we are informed the terminal joint of the antennæ is elongated, cylindrical, and setigerous at base, and that its scutellum is emarginate. It is therefore obvious, that the genus under consideration must be placed between *DIOPSIS* and *ACHIAS*; and that notwithstanding the brevity of the processes of the head, and the frontal origin of the antennæ, it appears to be more intimately allied to the preceding.

Sphyracephala is compounded of the words *Σφυρα*, *malleus*, and *κέφαλη*, *caput*, in allusion to the form of the head.

SPHYRACEPHALA BREVICORNIS.

SPECIFIC CHARACTER.

Dusky ; wings bifasciate, with brown ; scutel, spines, and feet yellowish.

SYNONYM.

DIOPSIS BREVICORNIS. *Nobis. Journ. Acad. Nat. Sciences*, vol. i. p. 23.

DESCRIPTION.

Head pale rufous, vertex and each side before the eyes dusky ; peduncles of the eyes not longer than the distance between their bases, a distinct seta on the superior part of the peduncle near the tip, and another each side of the vertex above the antennæ, rather larger than the seta

PLATE 52.

of the antennæ: *sternum* situated on a very slight elevation: *trunk* with the lateral spines conic, blackish: *scutellum*, spines cylindric, setigerous at tip: *wings* hyaline, a band behind the middle, and a semiband before the middle, brown; *poisers* white: *abdomen* black, immaculate: *feet* yellowish; *anterior thighs* very thick rufous, blackish above and beneath.

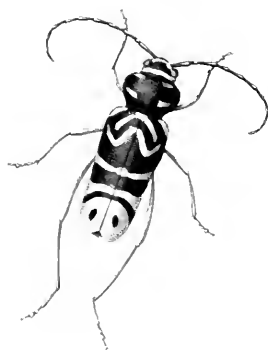
OBSERVATIONS.

This insect is very rare in Pennsylvania; a few years since, I obtained a single individual in the month of May; it had alighted on a leaf of the skunk cabbage, near the Wissahickon creek, a few miles from this city. During my subsequent excursions in pursuit of insects, I had never the good fortune to meet with another specimen, until the autumn of 1819, when with Major Long's party on the Missouri, near the cantonment of the party, on the river shore was a considerable body of rock, on which I was frequently occupied in hunting for organic reliquæ; here, amongst other interesting objects, I had the satisfaction to find the present insect in considerable numbers, lodged, for protection

against the high winds and cool temperature,
in small crevices of the rock.

The plate exhibits two views. The line
shows the natural length ; and a wing is figured
below.

PLATE 52.



CLYTUS.

GENERIC CHARACTER.

Body elongated, subcylindric; head inclined; antennæ shorter than the body, inserted in an emargination of the eyes, eleven-jointed; labrum apparent; labial palpi with the last joint obtri-gonate; thorax globose, unarmed; hind thighs clavate.

OBSERVATIONS.

A genus somewhat numerous in species, belonging to the natural family CERAMBYCIDÆ, Leach. The species were scattered in the genera CERAMBYX, CALLIDIUM, and SEPTURA, until Fabricius perceived the necessity of a separation, and he embodied them under the present designation. Many of them are very prettily ornamented with bright yellow bands and spots. In the larva state they live in wood, penetrating freely through the hardest trees, and proving very injurious to the particular kinds of timber which they attack.

PLATE 53.

CLYTUS SPECIOSUS.

SPECIFIC CHARACTER.

Black ; thorax dilated ; elytra about five-banded ; feet yellow.

SYNONYM.

C. SPECIOSUS. *Nobis. Long's Second Expedition*, vol. ii. p. 290.

Body deep black ; *head* with a band passing from the vertex round behind the eyes, and meeting a band which is round the mouth above, yellow ; a yellow band on the front, immediately above the antennæ, terminating in the sinus of the eyes ; *mandibles* yellow ; *nasus* and *labrum* pale yellowish, glabrous ; *antennæ* all black : *thorax* subglobular, depressed ; an oblique spot each side before, and another oblique, longer spot or abbreviated line each side of the middle, yellow ; an arcuated, impressed

line each side of the middle; *scutel* yellow; two small yellow spots before the scutel, under the thorax: *elytra* with yellow bands; the first band forms a regular arch, of which the scutel represents the key-stone; the second band is in the form of the letter W, each V receiving a termination of the first band; the third band is nearly transverse, placed upon the middle; fourth band arcuated each side from the suture obliquely backward, parallel and near to a large terminal spot or band, which on each elytrum is ovate, with a central black spot; tip with a short obtuse tooth; *humerus* with three small spots: *postpectus* spotted with yellow: *thighs* with a brown line on the inner side: *venter* yellow.

OBSERVATIONS.

During a short repose of Major Long's party on the bank of the Wisconsin river, preparatory to crossing that stream, this unusually fine insect attracted the eye of that officer, as it rested on the bark of a hickory tree. Another specimen belongs to the Philadelphia Museum, probably taken in Pennsylvania. As these two are the

only individuals that have yet occurred, the species must of course be considered as rare.

The upper figure of the plate.

CLYTUS HAMATUS.

SPECIFIC CHARACTER.

Black ; thorax with a yellow margin ; scutel, two bands, and elytral spot, yellow.

SYNONYM.

C. HAMATUS. *Nobis. Journ. Acad. Nat. Sciences*, vol. iii. p. 423.

DESCRIPTION.

Body black : *antennæ* rufous, filiform ; terminal joints black ; *palpi* piceous : *thorax* hairy ; the hairs cinereous ; margin yellow. which colour is interrupted behind : *scutel* yellow : *elytra* slightly hairy at base ; each with an oval, oblique spot near the basal middle ; then a sub-

PLATE 53.

sutural line proceeding from near the basal spots to the sutural middle, thence it curves over the disk, and terminates in a small spot rather before the middle on the exterior margin; an oblique line behind the middle passes from the suture outward; all these bands and spots are yellow; disk near the tip obsoletely obscure fuscous; the tip rounded, unarmed; *beneath* spotted and banded with yellow: *feet* rufous: *thighs* at tip dilated, compressed, black.

OBSERVATIONS.

Has some resemblance to *C. ARIETES*, Fabr., of Europe, but besides other points of distinction, the elytra are not remarkably truncated as those of that species are. It seems also to be allied to *C. ARVICOLA* and *AURICOLA*, Oliv., and particularly to the latter, from which, however, it may be distinguished by its larger size, by having the thorax nearly surrounded by a yellow line, and by the obliquity of the terminal band of the elytra. I obtained it near the Illinois river.

The lower figure of the plate.

PLATE 53.

CLYTUS UNDULATUS.

SPECIFIC CHARACTER.

Brown; thorax sub-bifasciate; elytra with a spot and three bands, yellow.

SYNONYM.

C. UNDULATUS. *Nobis. Long's Second Expedition*, vol. ii. p. 291.

DESCRIPTION.

Body dark brown: *head* darker than the elytra; *antennæ* dark ferruginous; *front*, below the antennæ, bilineate with pale yellow: *thorax* darker than the elytra, rough with minute spines and hairs; anterior and inferior margins yellow, interrupted above; basal margin with a transverse yellow spot each side: *elytra* with a transverse spot on each near the base; an undulated narrow band across the middle, rising along the suture nearly to the scutel; an undulated transverse band behind the middle, and

PLATE 53.

a terminal band: *postpectus* with the incisures margined with yellow: *venter*, having the segments margined with yellow.

OBSERVATIONS.

I caught the two sexes of this species in the Northwest Territory, when traversing that part of the Union with Major Long's party. It seems to have some resemblance to the *C. MUCRONATUS*, Fabricius, of South America; but the elytra are not mucronate, and the markings of the superior surface of the body are different.

The right figure of the plate.

CLYTUS CAPREA.

SPECIFIC CHARACTER.

Fuscous; thorax with the anterior edge, yellow; elytra with four bands and tip, yellow.

PLATE 53.

SYNONYM.

C. CAPREA. *Nobis. Journ. Acad. Nat. Sciences*, vol. iii. p. 424.

DESCRIPTION.

Body blackish, hairy: *head* immaculate; *antennæ* short, dull rufous: *thorax* very hairy; a longitudinal series of transverse, abbreviated, elevated lines, of which the anterior one is much more elevated; a yellow line on the anterior edge, interrupted on the side: *scutel* small, black: *elytra* dark brown, blackish towards the base; four bands and tip yellow; the first and second bands on each elytrum are united in the form of a circle, only interrupted by the prominent humerus; third band central, and representing a common M; fourth band drawn obliquely backward from the suture; *tip* emarginate, a prominent spine at the exterior angle: *abdomen* and *posterior portion* of the *pospectus* fasciate with bright yellow sericeous hair: *feet* hairy, rufous, or blackish; posterior pair elongated; *thighs* dilated, mucronate at tip.

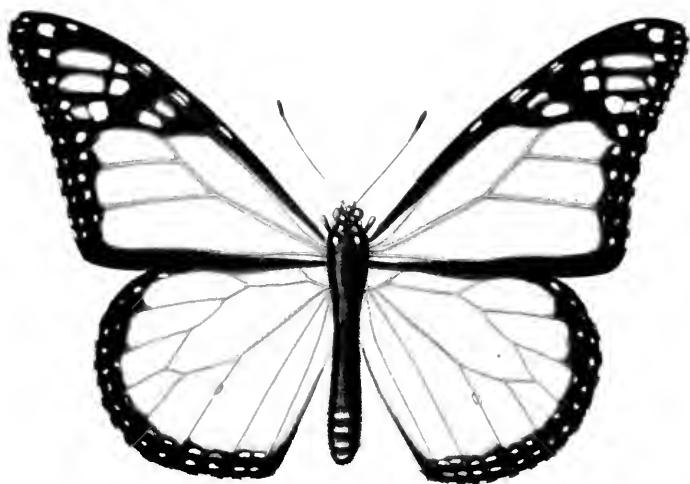
PLATE 53.

OBSERVATIONS.

A handsome species, easily distinguished from others by the rugous thoracic line, combined with the O O at the base of the elytra. It inhabits this state, and Mr. T. Nuttall presented me with many specimens which he found in Arkansaw. The bands of the elytra are sometimes white.

The left figure of the plate.

PLATE 53.



DANAUS.

GENERIC CHARACTER.

Anterior feet spurious in both sexes ; antennæ terminated by a club ; palpi distant, subcylindric, slender, short ; inferior wings rounded, not forming a groove for the reception of the abdomen ; nalis of the tarsi simple.

OBSERVATIONS.

Latreille established this genus to comprehend the Fabrician genera EUPLOEA and IDEA. They were included in the genus PAPILIO by Linneus, and formed part of his division of DANAI FESTIVI.

PLATE 54.

DANAUS PLEXIPPUS.

SPECIFIC CHARACTER.

Wings entire, fulvous, with dilated black veins, margin black, with white dots.

SYNONYMS.

PAPILIO DANAUS PLEXIPPUS. *Linn. Syst. Nat. Gmel.* vol. i. part 5, p. 2278.

PAPILIO PLEXIPPUS. *Cram.* vol. iii. p. 24, pl. 206, figs. E and F. *Herbst. Natur.* vol. vii. p. 19, pl. 156, figs. 1, 2.

CATESBY CAROLINA. Vol. ii. pl. 88.

LINMUS FERUGINEA PLEXIPPE. *Hubner.*

PAPILIO ARCHIPPUS. *Smith, Ins. of Georgia,* vol. i. pl. 6.

DESCRIPTION.

Superior wings above fulvous, anterior margin black, with white dots; exterior margin black, with a double series of white dots; the black at the tip is very broad, and contains a dilated,

interrupted, and abbreviated fulvous band and several pale fulvous spots; posterior margin black, immaculate; beneath as above, but the spots are of a purer white; *inferior wings* entire, sometimes a little crenate, fulvous, with a black posterior, and half of the exterior margins black, the former with a double row of white spots, of which those of the middle are sometimes nearly obsolete, outer margin with a single series of three or four white spots; nervures of the disk margined with fuscous, with an elevated spot behind the middle, on the third nervure from the inner margin; beneath ochreous, in other respects resembling the superior surface, but the spots are of a purer white and larger, the nervures are more dilated, black, edged more or less deeply with white: *body* black, with numerous white dots on the trunk, and a few on the head, and neck above: *feet* blued black.

OBSERVATIONS.

The black margin of the superior surface of the wings has an opalescent gloss in a particular light. The larva is annulate with black and white, with two slender processes on the ante-

rior part of the body, and two on the posterior part. The pupa is of a delicate green colour, with dots of burnished gold. It feeds on different species of ASCLEPIAS, and is very abundant in the neighbourhood of Philadelphia, on the *A. syriaca*, and according to Abbot in South Carolina, on the *A. curassavica*. I consider the present as the *plexippus*, on the authority of Gmelin, who, in his edition of the *Systema Naturæ*, states its native country to be North America. I have of course omitted many synonyms and references which that author has inserted, as I consider them to be doubtful. Catesby's figure cannot be mistaken; he states that the species is "common in most of the northern colonies in America."

The plate presents two views of the insect.

PLATE 54.

INDEX.

COLEOPTERA.

Cychrus	*viduus	-	-	-	PLATE 45
Sphæroderus	stenostomus	-	-	-	—
	*bilobus	-	-	-	—
Scaphinotus	elevatus	-	-	-	—
Malachius	*bipunctatus	-	-	-	48
	*tricolor	-	-	-	—
	*nigriceps	-	-	-	—
	*vittatus	-	-	-	—
	*otiosus	-	-	-	—
Enoplium	*onustum	-	-	-	41
	pilosum	-	-	-	—
	damicorne	-	-	-	—
	*quadripunctatum	-	-	-	—
Boletophagus	cornutus	-	-	-	51
	*corticola	-	-	-	—
Clytus	*speciosus	-	-	-	53
	*hamatus	-	-	-	—
	*undulatus	-	-	-	—

INDEX.

Clytus *caprea	-	-	-	-	PLATE 53
Languria bicolor	-	-	-	-	39
mozardi	-	-	-	-	—
*puncticollis	-	-	-	-	—
*trifasciata	-	-	-	-	—

ORTHOPTERA.

Spectrum *femoratum	-	-	-	-	37
*bivittatum	-	-	-	-	38

HEMIPTERA.

Tetyra *fimbriata	-	-	-	-	43
*cinctipes	-	-	-	-	—
*violacea	-	-	-	-	—
*alternata	-	-	-	-	—
Ploiaria *brevipennis	-	-	-	-	47

NEUROPTERA.

Phryganea *subfasciata	-	-	-	-	44
*dosuaria	-	-	-	-	—
*semifasciata	-	-	-	-	—
*interrupta	-	-	-	-	—

INDEX.

HYMENOPTERA.

Pompilus	*formosus	-	-	-	PLATE 42
	*unifasciatus	-	-	-	—
	*terminatus	-	-	-	—
Philanthus	*canaliculatus	-	-	-	49
	*zonatus	-	-	-	—
	vertilabris	-	-	-	—
	*politus	-	-	-	—

LEPIDOPTERA.

Papilio	turnus	-	-	-	-	40
Danaus	plexippus	-	-	-	-	54
Melitæa	myrina	-	-	-	-	46
Hipparchia	*semidea	-	-	-	-	50

DIPTERA.

Sphyracephala	*brevicornis	-	-	-	52
---------------	--------------	---	---	---	----

END OF VOL. III.

